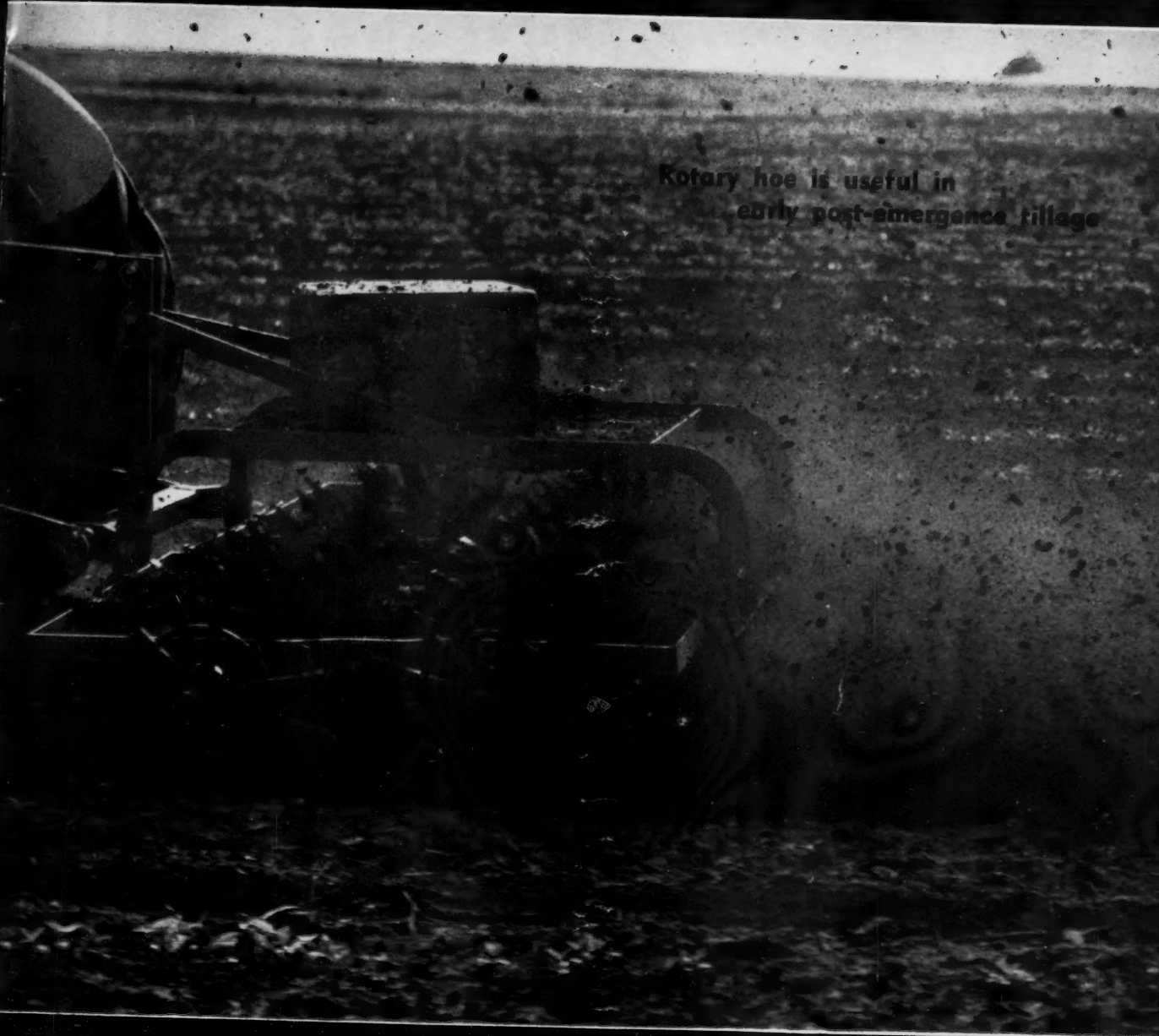


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Objectives of the American Soybean Association include the bringing together of all persons interested in the production, distribution and utilization of soybeans; the collection and dissemination of the best available information relating to both the practical and scientific phases of the problems of increased yields coupled with lessened costs; the safeguarding of production against diseases and insect pests; the promotion of the development of new varieties; the encouragement of the interest of federal and state governments and experiment stations; and the rendering of all possible services to the members of the Association.

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An Appeal for Your Support

MONTH AFTER MONTH, year after year, we have turned to this page for guidance and inspiration by George Strayer. His words and thoughts have represented the American soybean grower without question or concern. This confidence, respect and authority have been earned as a result of many years of hard work, self sacrifice and clear thinking.

Last month we were further privileged to read the words of another worker for and leader of American agriculture. Ersel Walley, too, has been a leader of the soybean-producing industry and he likewise has donated limitless amounts of time, energy and wisdom on our behalf as well as for many others.

On many occasions and on other pages, we read of many others of our Association active in the affairs of soybeans as well as other segments of American agriculture. These men are instrumental in carrying on the many jobs needed to be done to help the soybean grower as well as all other segments of agriculture and for these we are extremely grateful.

In carrying on the normal duties of our Association and as a result of the many worldwide travels made on behalf of us growers these men have developed a program which offers great benefits to all American agriculture.

The American Soybean Association is now deeply involved in a program not of controls but concerned with production and marketing. We believe we soybean growers have something the entire world needs. We don't for one moment claim to have the complete solution but we know we can help the general farm situation on practical terms and in accordance with our basic beliefs.

Our program is not to limit the supply but to grow the product and then sell it. The American Soybean Association in conjunction with other organizations and the U. S. Department of Agriculture has been surveying world markets and knows they exist. This known potential market and need for soybeans, proteins, fats and oils the world over should provide great hope for all segments of American agriculture. It should also encourage others indirectly affected to support this universal sales program whether they grow soybeans or not.

We know how much soybeans have meant to all farmers in this country. Soybeans have helped immeasurably to absorb the acreage reductions

required in other crops. As a result of a great need for the soybean and because of much assistance from our American Soybean Association, this market has until now remained fairly good. In spite of steadily increasing production we are still in a hopeful and desirable position. We have a tremendous job before us, yet we are assured that with great effort we can be successful. We have limited manpower and finances, but fortunately we still have freedom and independence where dedicated and energetic people will be able to accomplish goals desired and needed.

Because soybeans have been able to move in free markets, producers of other crops have suffered less. This should remind everyone that they should be concerned with the outcome of further endeavors of soybean producers to develop world markets. We know they exist, but we must build them. If the soybean can continue to absorb acreage from other crops in surplus on a profitable basis all of agriculture is to benefit. Therefore, it becomes the concern of all agriculture to help assure success.

The men we have referred to above have already made wonderful strides forward. They have shown us the way and have instigated a program we can follow. We now find ourselves at a point where we must call on many others to accept responsibilities and become active in a program that is designed by a free people to help themselves.

The American Soybean Association has taken the position as leader and spokesman for soybean growers and rightfully so. We have, however, many new soybean growers who are not members as well as members who are not active. We need the support of every grower of soybeans. We need new members, we need new workers, and we need additional thinkers. We have seen the wonderful accomplishments made to date and we have seen the demands of the future. We have seen the hopes for all segments of agriculture.

Everyone must realize the need for support in such a vast undertaking, and it is with this in mind that we make this appeal. We need the support of all existing members and we need assistance in gathering new members. We need assistance, understanding and promotion by all others benefiting from our efforts. Only as a united and organized group can we as free individuals voluntarily joined together accomplish what we know must be and can be done.



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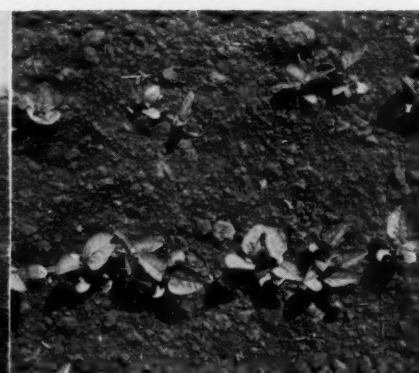
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Cultivation for WEED CONTROL in Soybeans

By DAVID W. STANIFORTH
CHARLES R. WEBER
and WALTER G. LOVELY¹

Left, before rotary hoeing: A heavy weed infestation in a good bean stand. Fully 90% of the weeds haven't yet emerged but are germinated "in the white." This is the time to rotary hoe! Center, a weighted, penetrating rotary hoe travelling at 10-12 mph. Note curtain of soil at rear of hoe. Right, after timely rotary hoeing, millions of weeds were killed by this first hoeing. Note lack of soybean injury and level condition of soil surface.

THE COMMON practice of seeding soybeans in rows has facilitated swift and easy cultivation and at the same time has made weed control essential to good soybean production. Soybeans may be planted in solid stands with good success, if adequate stands are established, if there are relatively light weed infestations and if shallow tillage is performed effectively. The competitive advantage of soybeans over annual weeds may be established by adequate bean stands and maintained by effective weed control during the period from seedbed preparation until early July. Cultural operations during this

period constitute a major part of the weed control program, although recently the potential role of herbicides has been widely recognized and intensively investigated.

In general, effective cultural operations must include adequate seedbed preparation, early shallow cultivations from bean emergence to the 4-6 inch seedling stage and followup cultivations for 3-6 weeks after seeding. The major problems concerned with cultural operations may be resolved into questions of when, with what implements and how much.

Seedbed Preparation

Cultural operations associated with seedbed preparation must be aimed at the establishment of adequate soybean stands at the expense of the weeds. Tillage implements

¹ Associate professor of botany and plant pathology, Iowa State College; agronomist, crops research division, ARS, USDA, and associate professor agronomy (farm crops); and agricultural engineer, agricultural engineering research division, ARS, USDA, respectively.

Two weeks after photos at top were taken: Photo at left shows the kind of weed control obtained with three timely uses of rotary hoe. Remaining weeds resulted in little loss in bean yield. Photo at right shows weeds remaining after two untimely uses of the rotary hoe; these weeds cut bean yields 5 bushels per acre (nearly 15%) below those in photo at left.



An Effective and Economical Program of Annual Weed Control

Maintenance of a long-term control of weeds through proper crop rotations.

Timing of land preparation and seeding to permit maximum destruction of weeds before crop emergence.

Seeding of beans at the proper rate and when soil temperatures are warm enough to insure a full stand and rapid emergence of beans ahead of weeds.

Timely and repeated use of the rotary hoe or other shallow cultivation implements to kill germinating weeds while they are "in the white." Proper speed and weighting of the shallow tillage implements are essential.

Careful followups with sweep cultivations in row-planted beans to complete the job of weed control.

Use of pre-emergence herbicides in band applications where weeds cannot be controlled even by superior cultural methods.

include the plow, the disk and the harrow utilized in a sequence of operations designed to promote optimum soil tilth and to reduce the populations of viable weed seeds in the upper 1 or 2 inches of soil. The final tillage operation prior to bean seeding should destroy existing weeds and should be timed so that soil moisture and temperature conditions are conducive to rapid bean emergence and growth.

The classic concept of seedbed preparation has in the past stressed the importance of killing several successive crops of weeds. Recent experimental evidence tends to minimize the importance of this aspect of preplanting tillage. Certainly under conditions of heavy weed infestations, optimum growth conditions and delayed seeding, this preplanting tillage technique may be effective.

However, the most important single tillage operation in the preplanting sequence is the one just prior to seeding. When this is done properly, soybeans emerge ahead of the weeds and the soil surface is left level to facilitate shallow tillage operations necessary in the next phase of the weed control program. Delays resulting from wet weather during seedbed preparation are serious in that they delay seeding dates and often necessitate an extra tillage operation.

Suggested Rates of Planting

In commercial soybean production, nine to eleven plants per foot of row at harvest is generally considered optimum. This means that ten to twelve plants per foot of row should be established, regardless of row width, to permit adequate emergence and to allow for a loss of 10% of

seedlings from shallow cultivation. The remaining nine to eleven plants will furnish adequate competition against surviving weeds and constitute enough stand to reduce branching and subsequent harvest loss. With solid-seeded beans, seven to eight plants per square foot at emergence will meet the requirements outlined for row-planted beans.

Early Post-Emergence Tillage

Timely, shallow, repeated, speedy and economical most accurately describe cultural operations which should be done during the period from bean emergence until the seedlings are 4-6 inches tall. Implements best suited to this type of tillage are the spike-tooth harrow, the weeder and the rotary hoe. The rotary hoe is the first choice since it may be used over a wider range of soil conditions and bean seedling sizes, without the danger of excessive bean damage. All three implements operate effectively at relatively shallow depths and at speeds that permit large acreages to be covered in a short time. This high-speed operation permits flexibility in the shallow cultivation program as well as careful timing of the operation to obtain maximum results. The relatively low cost of rotary hoeing permits economical weed control even when repeated two or three times.

The keys to success with the rotary hoe are timeliness, optimum speed and soil penetration. Timing is critical and should be geared to the stage of weed growth rather than to stage of bean growth. The sequence of rotary hoe operations should begin when the majority of weeds have germinated but have not yet emerged (in the white). The

optimum time is illustrated in the photographs. Weeds are easily killed at this stage, but after emergence they cannot be destroyed effectively with a rotary hoe.

Ideally, the soil should be dry on top and slightly crusted at the time of the first rotary hoeing. In general, the best combination of weed germination and soil condition will be met about 3-5 days after bean emergence. Rotary hoeing at speeds of 8-12 miles per hour at this time will effectively destroy the majority of weed seedlings. If rotary hoeing is delayed only 3 or 4 days many weeds will have emerged and the effectiveness of the operation may be reduced 50%. Rain within a day after rotary hoeing may result in many of the weeds recovering and will necessitate another hoeing as soon as possible.

Research data show clearly that most weeds were controlled by timely rotary hoeings beginning 3-5 days after bean emergence and repeated as needed at approximately 5-day intervals. When the first hoeing is highly effective or when weed infestations are light, there is probably little need for the third hoeing. However, the number of hoeings should be determined by conditions of the season and particularly by the kind and size of weeds present.

Rotary hoeing is practically useless after weeds have become well established and in addition the larger the bean plants the greater the chances of bean injury. In general, it appears that two timely and effective hoeings would be enough in many fields.

Rotary hoeing not only gives effective, economical weed control early in the season, but it also leaves the soil surface level and in good tilth so that when subsequent shovel or sweep cultivations are performed there is enough loose soil to cover the weeds in the rows.

Row Cultivation

The third and final phase of the weed control program utilizes shovel or sweep type cultivators to destroy weeds between rows and to cover emerged seedling weeds in the bean rows. It represents the last chance to control weeds. A good job of cultivation at this time may make up for a relatively poor job of earlier shallow cultivation with the rotary hoe. Wet weather may delay the sweep cultivations and fields may become fairly weedy unless the earlier weed control has been effective. Cultivator adjustment is of

prime importance at this stage. When preceded by an effective program of shallow tillage, sweep cultivations may be delayed until the beans are tall enough to escape covering.

In many instances one cultivation may be sufficient, but in practice two or more are common. If more than one cultivation is anticipated, the soil should be left as level as possible by the first one. Excessive ridging should be avoided since it may interfere with harvesting operations.

Cultivation Sequence in a Nutshell

Cultural operations beginning with seedbed preparation, continuing with over-the-row shallow tillage and ending with between-the-row sweep cultivations follow a logical sequence and are designed to take advantage of differences in the growth patterns of soybeans and weeds. A major difference which can be exploited successfully at this time is the optimum depth for germination. Weed seeds germinate largely from the top 1-inch of the seedbed. Good seedbed preparation results in a dry top soil at the time of seeding. The beans may then be seeded in more moist

soil below the zone of maximum weed germination. This enables the beans to emerge first and to establish their root system ahead of the weeds.

Shallow cultivation with the rotary hoe should begin just as the weeds have germinated but before they emerge. Weeds are killed easily and the beans not injured materially. Subsequent shallow tillage kills additional germinating weeds and partially uproots those which have emerged in spite of tillage.

This period of advantage for shallow tillage is relatively short, however, and ends as soon as weed seeds stop germinating and surviving seedlings become established. At this time, too, bean seedlings are large enough so that they are more seriously injured by over-the-row cultivation. Now emphasis must be shifted to row cultivation to bury surviving weeds in the row and to control weeds between rows.

While it is possible to offset a poor job of seedbed preparation by good shallow tillage and cultivation or to minimize the effects of poor rotary hoeing with good cultivation, best results will be obtained when each of the three phases is

successful. A superior job of seedbed preparation makes for better chances of successful rotary hoeing, and in turn good rotary hoeing makes for a superior cleanup job with the cultivator.

What About Herbicides?

The successful utilization of herbicides in soybean production must depend ultimately on development of herbicides that can substitute for all or a major part of the cultivation program. Such herbicides might be utilized as preplanting soil treatments to kill weed seeds in the soil, as soil applications after bean seeding but prior to emergence to kill germinating weed seeds without bean injury, or as selective post-emergence applications to kill weed foliage after emergence. At present, soil-fumigant type herbicides are not economical and selective foliage sprays are not available. Most of the present interest in herbicides for soybeans is centered on the use of selective preplanting soil incorporated herbicides and pre-emergence herbicides applied to the soil immediately after bean planting.

Among the herbicides most widely investigated, Alanap (N-1-naphthylphthalamic acid), Randox (2-chloro-N,N-diallylacetamide) and pentachlorophenol (sodium salt of PCP) have shown promise. In general the major limitations to the use of these herbicides on a production scale include the following: (1) They are not reliable enough to be substituted for a major portion of the tillage sequence and (2) they are not sufficiently economical to be utilized as general supplements to a cultural program.

However, in areas where serious weed infestations such as giant fox-tail are a major hazard to bean production, the use of a pre-emergence herbicide in band applications over the row should prove an economical supplement to the cultural program.

Future developments in herbicide technology will doubtless result in herbicides that can be substituted economically for a substantial part of the cultivation program. At present, however, the cultural program of weed control is more economical except in areas and under conditions where severe weed infestations have not been controlled by even the best of cultivation methods.

Two other articles on weed control in soybeans appeared in the March issue.

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Soybean Research at the Missouri Station

By CLYDE H. DUNCAN

**COMBINING soybeans on the J. B. Finklea farm
in Stoddard County, Mo.**

THE MISSOURI Agricultural Experiment Station became interested in soybeans as early as 1909. Records of that year indicate that several varieties were obtained from the U. S. Department of Agriculture for testing. Pioneer agronomists W. C. Etheridge and C. A. Helm were leaders in promoting the use of soybeans as a hay crop in Missouri, principally on land too depleted in lime to grow successful crops of red clover.

Soybean hay acreage in Missouri built up to about 300,000 and stayed there for almost two decades before the shift to "bean-type" varieties started just before World War II. During the last 20 years the acreage in soybeans expanded gradually to the present 2-million level with yields per acre almost doubling in that same period.

A modest breeding project led by B. M. King was begun during the early 30's and has continued and expanded since 1936 as a cooperative program with the U. S. Department of Agriculture and the U. S. Regional Soybean Laboratory. Early USDA workers on the breeding program were Denver Allen, Leon McHoney and E. B. Early followed by Carl Feaster and in 1951 by Dr. L. F. Williams, who is assisted at the present time by Arnold Matson.

Because recent breeding research has of necessity concentrated on resistance to important diseases it would be easy to overlook other very important varietal improve-

ment and adaptation studies that have been made. A large number of varieties were selected or introduced to fit the various growing conditions of the state. Satisfactory varieties are now available for each maturity area in Missouri and for early mid-season, and late planting within each area.

Date of planting studies were begun in 1942 in southeast Missouri, where soybeans may be planted over an unusual range of time from Apr. 1 to July 15. The available early maturing varieties back then yielded best when planted in June. Recently developed early varieties have yielded best, however, in plantings made Apr. 1 to May 1.

An unexpected discovery for the lower "boot-heel," or extreme southeast corner of the state, was that Lee, a superior long season variety, could also be planted as late as July 1 to give satisfactory yields of mature, high-quality beans. Since Lee is unexcelled in shatter resistance its choice for late planting has been increasing in recent years.

Other similar studies at Columbia have led to the conclusion that some varieties, Clark for example, perform relatively well over a wide range of planting dates.

Disease Resistance

The development of soybean varieties resistant to disease is one means of increasing returns to the grower and stabilizing production, points out Leonard F. Williams, re-

search associate of the Missouri Experiment Station.

Breeding for disease resistance got its start in Missouri when Carl Feaster determined the mode of inheritance of resistance to bacterial pustule leaf spot and together with Dr. Allington at Illinois worked out a dependable method of producing artificial epidemics on a field scale to simplify the testing of strains, Dr. Williams says.

Additional impetus was given by a grant from the National Soybean Processors Association in 1952 for breeding resistant varieties. In the meantime, Athow at Purdue had been working on frogeye leaf spot and had discovered resistance in two commercial varieties, Lincoln and Wabash. More recently resistance to brown spot, *Phytophthora* root and stem rot, bacterial blight and stem canker have been reported. With the release of Lincoln, Wabash, Clark, and Lee (all resistant) frogeye has virtually disappeared.

Dr. Williams points out that major emphasis in Missouri is now directed towards transferring resistance to several important commercial varieties, using the backcross method.

Dr. Williams reports that bacterial pustule leaf spot is perhaps the most consistently found soybean disease. Yield reduction in experiments has been between 5% and 15%. Since resistance is simply inherited, and inoculation technique is not difficult, progress has been good and Clark is



TERRACED field of soybeans belonging to Wayne Mayer near Harrisonville, Mo.

now in the fourth backcross. "After two more backcrosses, we will have a strain with 99% of Clark inheritance and resistance to bacterial pustule disease," the Missouri researcher says. "In addition, resistance to bacterial pustule disease confers virtual immunity to wildfire leaf spot."

Since Scott and Lee are already resistant to bacterial pustule disease there is no need to transfer resistance. Resistance to *Phytophthora* root rot is also simply inherited and easily tested for. Clark is in the fourth backcross and Lee in the second backcross.

Resistance to bacterial blight is not simply inherited and is not so easy to measure. Steps have been taken to transfer the blight resistance to Clark and Scott.

Resistance to *Septoria* brown spot has been reported to be due to a single recessive gene. Crosses of Clark and Scott with a resistant type have been grown and first backcrosses made.

Dr. Williams points out that in recent years considerable publicity has been given to the occurrence of the soybean cyst nematode in the Missouri, Arkansas, Tennessee, Mississippi Delta. Cooperative tests of over 3,000 strains have demonstrated that the variety Peking has a very satisfactory resistance. Studies indicate that inheritance is complex and large numbers will need to be grown. In addition testing techniques are laborious and not 100% accurate. A backcrossing program has been started to transfer this resistance to Clark and Scott.

At the present time the root knot nematode causes far more damage than the soybean cyst nematode, especially on sandy land. Work is under way to develop resistant varieties using the noncommercial varieties Anderson and Laredo as sources of resistance. Preliminary results indicate that the transfer of resistance to commercial varieties is possible.

Controlling Weeds

If you had more than the usual amount of weeds in your 1958 crop of soybeans you will be interested in the recent findings along this line at the Missouri Station. The development of chemical weed control has stimulated a considerable amount of research of weed control questions that need to be answered, according to E. J. Peters of the University of Missouri field crops staff.

These questions are: What herbicides are effective for weed control in soybeans and to what extent can herbicides supplement or replace conventional cultural practices? The Missouri Station's first step was to evaluate chemicals available for weed control.

Researchers at the Station have been evaluating chemicals for a number of years. The number one objective has been to determine the weed controlling properties of herbicides. Chemicals that show promise are continued in experiments each year. The use of the less promising chemical is discontinued.

"To be satisfactory a chemical has to consistently give a minimum

amount of injury to soybeans and a maximum amount of weed control," Dr. Peters says. "To date the better chemicals will control weeds from 4 to 6 weeks." Dr. Peters and his associates would like to see a chemical that will control weeds throughout the growing season.

In Missouri tests the chemicals which have given good weed control and little injury to soybeans are PCP (Na) at 20 pounds per acre and CDAA at 4 pounds per acre. CDAA (Randox) is somewhat erratic in weed grass control and is not exceptional for broad-leaved weed control.

"In more than 20 experiments," Dr. Peters points out, "the use of PCP at 20 pounds per acre in addition to cultivation has increased the soybean yields, over cultivations alone, by an average of 5 bushels per acre." Unfortunately, this chemical does not have Food and Drug Administration clearance and it cannot be recommended for soybeans.

CIPC and DNBP have given good weed control, but have injured soybeans more frequently than researchers would like to see. NPA (Alanap) at 4 to 6 pounds per acre has stunted beans severely in about 75% of the tests.

EPTC (Eptam) has been tested for 2 years and has given injury to soybeans at 5 and 10 pounds and weed control has been erratic. Last year the 4-pound rate was tried and it injured soybeans somewhat but weed control was excellent.

Dr. Peters points out that work done for the past several years indicates that weeds growing in the soybean row and not normally controlled by cultural practices can be reduced considerably by the use of herbicides with an increase in soybean yields. Preliminary work also indicates that herbicides available at the present time cannot completely replace cultivation, although with the use of herbicides two cultivations are sufficient where normally three would be necessary, and sometimes only one cultivation is necessary.

Fertility Studies

Missouri is at the western edge of the principal soybean growing area. Frequently the combination of high summer temperatures and low rainfall will limit the response to soil treatments. In the southern part of the state, with soils of a higher degree of weathering, and development, soybean production is largely

limited to the alluvial areas, reports George E. Smith, professor of soils at the University of Missouri. "It is on these bottomland soils that the beneficial effects of high nutrient levels and organic matter content are so obvious in soybean production. In these areas of intensive cultivation, efficient soybean production is limited to these soils that can supply the nutrients and moisture required by this crop."

In recent years the fertilization practices for most crops have changed from the application of starter fertilizers in the row at the time of planting to amounts that are required to bring the soil level sufficiently high to supply the quantity required for optimum crop yields. Increased production of corn, cotton, small grains and forages, in favorable seasons, has shown that the performance of high-yielding varieties can be no greater than the capacity of a soil to deliver nutrients.

With crops that make most of their growth during the summer, the use of plow-down treatments has been necessary to place the nutrients where they can be absorbed during dry weather. The striking effect of this fertility program on corn production has revised previous concepts concerning the "so-called" capabilities of many low fertility soils.

"Nutrient additions to eliminate lack of fertility as a problem in crop production, improved varieties, and better equipment have been key factors in increasing the yield of soybeans. However, the effect of individual nutrients, or the quick response of soybeans to added fertility, has been less striking than with many other crops," Dr. Smith says.

It has been only on soils low in one or more nutrients that the direct effect of row or plow-down applications of fertilizers has had striking effects on soybean yields. Numerous experiments have been conducted on low fertility soils where plants show deficiency symptoms and yields of only 10 to 15 bushels per acre are secured without treatments.

The addition of a deficient element, such as phosphorus or potassium, to these soils has frequently produced increases of 10 bushels or more per acre. However, little response has been obtained from higher levels of these added nutrients or from the same treatments on soils of average fertility. It is only when attention is given to a well-rounded fertility program of

proper nutrient addition, organic matter turnover, and water retention that better yields are secured from these soils that normally produce only average yields.

This response is seldom secured in a single season. The fertility program for high yields of soybeans is usually one of raising nutrient levels sufficiently high for optimum yields of all crops grown, with little direct nutrient addition specifically for the soybeans.

The frequent lack of response of soybeans to direct application of fertilizers, except on the most deficient soil, is frustrating to the investigator, Dr. Smith finds. An analysis of the soybean plant shows it to be higher in most soil supplied nutrients than most other crops grown in the Midwest.

Many laboratory or greenhouse studies conducted with soybeans under a controlled environment show favorable response from increments of a specific element. In fact the soybean is frequently used as a test plant in plant nutrient and physiology experiments. Yet these responses frequently cannot be duplicated under field conditions. Such lack of response has demonstrated the fallacy of too literal interpretations of controlled pot experiments. It would appear that the soybean plant is more complex in its growth processes than some other species.

"The nutrition and fertilization of soybeans for increased production and quality is one of the major projects of the Missouri Experiment Station—although summer drouth the past few seasons has made progress slow," Dr. Smith concedes. Perhaps with increased facilities for irrigation, a shortage of summer moisture will be less of a limiting factor in this work. The following are some of the Missouri plans in designing experiments and conducting field work with soybeans:

1—Lime must be present in adequate amounts. Results indicate that calcium should make up at least 75% to 80% and magnesium 10% of the exchangeable nutrients. Moist soils with this content of these elements will have a pH of 6.5 or above.

2—Phosphorus must be present in adequate amounts. At Missouri we have been using much rock phosphate with more available forms used as starters on both soybeans and other crops in the rotation. The use of phosphate rock is an economical means of increasing the phosphorous content, particularly of acid soils low in this element. Fun-

damental work has shown that the soybean root has the capacity to utilize both the phosphorus and calcium in minerals such as rock phosphate to a much greater degree than cereal crops.

3—At Missouri good response has been had from additions of muriate of potash when potassium is deficient. However, excessive applications of this element have depressed yields in some cases. Whether this could be a salt effect in dry seasons or the complicating effects of other elements added with the potassium remains to be clarified.

4—Nitrogen fertilizers have had small effects on yields. A 40-bushel crop of soybeans could contain about 200 or more pounds of nitrogen. Assuming that one-third to one-half might come from the soil, it is still possible that the symbiotic organisms might not fix the additional nitrogen need for this high production.

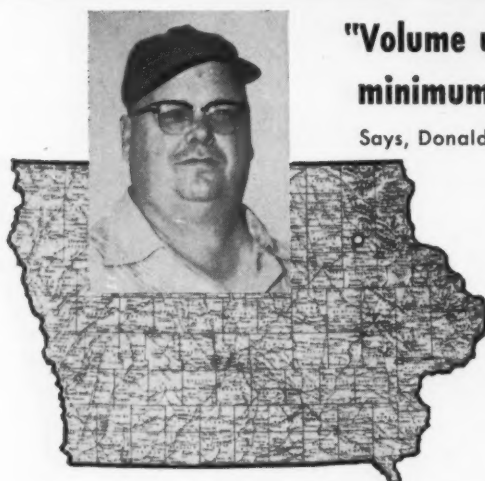
5—Moisture supplies for soybeans in midsummer are frequently critical on many soils in Missouri. Perhaps the buildup of fertility that is known to increase bean yields may be closely related to the penetration and storage of water.

6—Many Missouri soils are shallow. In hot dry weather feeder roots of soybeans may be at depths below the greatest concentration of nutrients. Perhaps some failures to obtain a response to added soil treatments may be a clue to a lack of sufficient moisture for absorption of these elements from water-deficient areas of the soil profile. Attention to deepening the root zone with adequate saturation of nutrients to these greater depths is a field where additional research work is needed.

Research is more interesting and rewarding where positive results can be obtained. We have concentrated on the easier problems with corn and wheat, but it is my opinion that we are approaching a limit in yields with these crops until the plant breeders provide us with varieties of greater yield capacities. We have not made as much progress with soybeans, but the importance of this crop makes it both a must and a challenge to better understand the nutrition and metabolism of this crop.

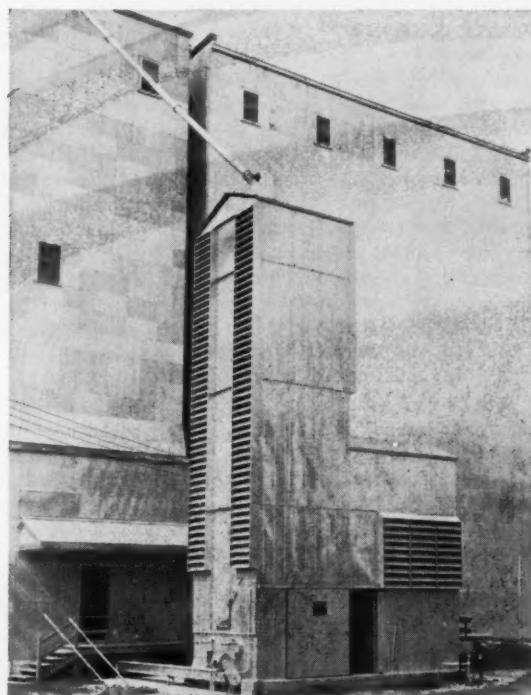
Attention to the basic growth processes of the soybean plant and the soil-plant relationship is necessary to furnish us with information that will permit its fertilization with the same degree of response that we now secure with some other crops.

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THE NEWS IN BRIEF

THE CROP, MARKETS AND OTHER ITEMS OF NOTE

Soybean Meetings to St. Louis

The joint annual conventions of the American Soybean Association and the National Soybean Processors Association will be held at the **Sheraton-Jefferson Hotel in St. Louis Aug. 10-11-12**, ASA president John Sawyer and NSPA president R. G. Houghtlin have announced.

The processor group will meet Aug. 10 and ASA on the following 2 days. This will be ASA's 39th annual meeting and the sixth consecutive meeting held in conjunction with the Processor Association.

Exhibit space will be available as usual.

International Animal Feeding Symposium

An international symposium on animal feeding is being sponsored by the Soybean Council of America, Inc., in cooperation with other groups in this country to be held early in May, President Howard L. Roach has announced.

The symposium will be attended by the scientific, industry and government representatives of 12 European countries, who will exchange views with U. S. leaders on more efficient animal nutrition.

The group will meet with the U. S. Department of Agriculture in Washington May 4-5-6. Representing USDA will be personnel from Agricultural Research Service, Foreign Agricultural Service, Agricultural Marketing Service, and USDA regulatory agencies.

There will be sessions at Purdue University, Lafayette, Ind., May 7-8-9, and the group will attend the American Feed Manufacturers Association convention in Chicago May 10. It will visit the Chicago Board of Trade and other Chicago points on May 11, and the Northern Utilization Research and Development Division at Peoria, Ill., May 12.

Countries to be represented at the symposium will include Belgium, Denmark, France, Germany, Greece, Holland, Italy, Norway, Portugal, Spain, Switzerland, and the United Kingdom.

German Export Program

An export market development program for U. S. soybeans and soybean products in Germany has been concluded between the Soybean Council of America, Inc., and USDA's Foreign Agricultural Service, Council President Roach reports. Previously, the Council made cooperative agreements for the soybean export program with the German Oil Millers Association and the German Mixed Feed Manufacturers Association. German sources have agreed to defray part of the cost of the program.

Purposes of the program in Germany include:

- 1—Improving the quality of German-processed soybean oil meal.
- 2—Demonstrating and encouraging the use of soybean oil in margarine and cooking fats.
- 3—Promoting the expanded use of soy flour in the human diet, looking forward to more protein and fewer calories.

Japanese Contract Extended

The contract between the American Soybean Association and the Japanese American Soybean Institute covering the U. S. soybean market development project in Japan, now 3 years old, has been extended through next Dec. 31.

Contract was signed on Mar. 11 by David R. Farlow, representing ASA, and members of the board of directors of the Japanese American Soybean Institute.

USDA Boosts Oil Export Estimate

USDA has boosted its estimate of edible oil exports this season to 1.5 billion pounds, up 100 million pounds from its last estimate. P. L. 480 shipments alone are estimated at between 1.1 and 1.2 billion pounds.

Commodity Credit Corp. was offering for sale Apr. 1 20 million pounds

of crude and 30 million pounds of refined cottonseed oil from its takeover stocks at Texas points.

CCC on Mar. 27 announced a crushing program for CCC-owned flaxseed to "help relieve the tight grain storage situation in the Northern Great Plains area." Processors will buy CCC-owned flaxseed at support price and sell linseed oil or the oil and meal on a competitive bid basis to CCC.

Proposals have also been made to toll crush a part of the 1958-crop soybeans to be taken over May 31 by CCC so as to keep operations at a high level and permit the meal to be used in the United States, but USDA is not known to favor this.

**Some
Reports
on Exports**

USDA on Mar. 3 announced an agreement with Iceland to finance the sale of \$100,000 worth of soybean or cottonseed oil (approximately 660,000 pounds). And on Mar. 26 USDA announced issuance of two authorizations to Yugoslavia under P. L. 480 providing for purchase of a total of up to \$1.7 million worth of soybean or cottonseed oil. Sales contracts between Apr. 2 and May 30 will be eligible for financing. Shipments from U. S. ports may be made between Apr. 2 and June 30.

The Japanese have contracted for shipment of 155,000 tons (5.7 million bushels) of U. S. soybeans during late March through June, according to Japanese sources. About two-thirds are scheduled for March and April shipment.

Over 9.6 million bushels of soybeans, nearly all of them from Red China, moved northbound through the Suez Canal in the August-December period of 1958 compared with 2.5 million bushels during the same period of the previous year, according to Foreign Agricultural Service, USDA. The difference reflects mainly the closing of the Canal during the previous year. Also, highly optimistic Red Chinese official estimates of greatly expanded production of oilseeds in 1958 may have prompted the release of soybean stocks for export.

**Opening of
St. Lawrence
Seaway**

"Grain and soybean sales booked for shipment down the St. Lawrence Seaway, when it is opened for business this spring, are much heavier than the most optimistic backer of this project visioned," notes Paul C. Hughes, secretary, Midsouth Soybean and Grain Shippers Association, Blytheville, Ark. "It was thought that lower ocean freight rates than were expected have been responsible for some of this business. The grain trade in that area is in a turmoil until shipments start and they can determine the effect of the Seaway on their business."

**Canadian
Acreage
Decline**

Canadian farmers' intentions as of Mar. 1 were to decrease plantings of all oilseed crops except flaxseed, according to the Dominion Bureau of Statistics. The Canadian soybean acreage may decline around 10% because of the prospective decrease in Ontario, where 233,000 acres may be planted compared with 263,000 last year.

Soybeans are gaining in importance in Manitoba but information on expected plantings is not yet available.

**Best
Planting
Dates**

Planting of soybeans within specified dates is extremely important for successful production, USDA reminds growers.

Best times to plant in the Northern States are May 15 to June 1; in the Central States May 10 to June 5; and in the Southern States May 1 to June 10. In extreme southern areas, the recommended planting dates are June 1 to June 30.

John H. Butterfield, Pana, Ill., reports more Harosoy and Clark soybeans will be planted in this area this spring. Some southern acreage will be planted to the Hood variety. Louis Groh, Clay Bank, Va., reports a good inquiry for Hood but not enough seed available to go around.

University of Illinois economists are now predicting a soybean carry-over into next year of 50 to 60 million bushels, somewhat lower than the USDA estimate.

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PREPARING a load of soybean milk.

Why Japan Needs Soy Milk

By **HARRY W. MILLER, M.D.**
Director, International Nutrition
 Research Foundation

IT WAS AN opportunity greatly appreciated to study the needs of the Japanese people nutritionally during my 7 months' responsibilities as surgeon and physician at the Tokyo Sanitarium and Hospital.

The Japanese people are eating per capita more soybean preparations than any other Asiatic nation or people. They have some 70 dishes made up wholly or in part from soybeans. However, the idea of a soybean beverage and milk from the soybean for soups and cooking was something altogether new. They at first thought that no additional soybean preparations were necessary, as they have such a variety of preparations, such as tofu (cheese curd), miso (a combination of fermented rice and soya), natto (fermented whole cooked soybeans), etc., which are available everywhere in the markets.

We, however, set up a small pilot plant where we made soy milk, soy cream, soy ice cream, and soy spread, and they caught a vision of what may yet prove to be the most generally adopted and useful soy preparation for human consumption,

applicable to all ages. The soy milk is particularly good for infants, school children's lunches and the aged groups, who are in need of a well-balanced and easily digested food.

In Japan, as in all Asiatic countries with heavy populations and low earning power, not only must the people look to vegetation and fish for nourishment, but they must procure it at a price level very little above that of the original market value of the products as they come from the land or the sea.

Dairy milk is a very expensive food when considered from the standpoint of the calories it contains. It requires much care, plus refrigeration, and in nondairy countries is almost prohibitive in cost. Although Japan is developing some dairy industry, still the per-capita consumption is very small because of the cost and limited supply. However, the government has encouraged the use of dairy products, as filling a gap in the nutritional setup.

Large food processing plants are uncommon in Japan, and practically unknown in most other Asiatic

Dr. Miller has had a lifelong interest in soy milk and has pioneered its use in both the United States and the Orient.

countries. They do have in Japan an estimated 35,000 small tofu (bean curd) plants, housed in space about the size of an American kitchen, where the soybean is hydrated, ground and mixed with water, thus extracting through filters the soluble nutrients of the soybean, which is mostly protein, some oil and carbohydrate, and yields a milky liquid. This liquid is heated and curdled and then pressed into cheese cakes for the market, to be used that same day by the local community.

Every morning each family brings their utensil to buy their daily consumption of cheese. While the Japanese are careful food handlers, and keep their surroundings clean, their meager economy does not permit the tile floors and walls and stainless utensils, as seen in modern dairy plants where milk and cream are handled.

Tofu Plant Addition

After seeing the ready acceptance by the nursing staff and patients of the Tokyo Sanitarium and Hospital of soy milk and soy cream made daily from a small fabricated plant of equipment procurable in Japan, we conceived the idea of such additions to be made to the tofu plants. They could continue not only to make the tofu, but could also have a formulated milk which could be bottled or carried away with utensils to their homes for daily consumption.

A great interest is now awakened in such a plant. Only one or two pieces of equipment need be added, such as a small homogenizer. And in some plants a double jacketed cooking kettle is required, as a colloid liquid has to be extracted from the soybeans to be curdled for tofu manufacture. Then instead of a portion of the daily run being curdled with gypsum into cheese, it would be placed in a kettle and boiled for 15 minutes. Then with sugar, oil, calcium and vitamins added the manufacturer would homogenize it and have a milk similar

to animal milk, that is not only pasteurized but has been boiled and is ready to be marketed, either in bottles or other utensils and at half the price level that equivalent calories can be bought in the form of local dairy milk. The latter is very scarce while soy milk can be made widely available.

Since tofu is made every day and marketed, and soy milk could also be marketed and consumed the same day as purchased, it would be bacteria free, and refrigeration would not be required. Thus the expense of transportation and other costs need not be added.

Not only were we able to give a practical demonstration of this plan at the hospital kitchen, but we fitted up a small tofu plant out in a rural district with a homogenizer and a few utensils for milk handling. The milk is being bottled and capped there, and the local community is most appreciative. Since it sells at half the cost of fresh dairy milk it leaves a modest profit for the local shop.

One problem must still be considered. Some remodeling of these little plants is needed to give them a more sanitary appearance for milk handling. As the industry grows we think this will take place. Many Japanese shops are streamlining at a very rapid pace, changing from the dingy shops of the past to nice fronts.

Milk Beverage

The use of a milk-like beverage and its need is well recognized by nutrition and welfare organizations in Japan. There seems to be no prejudice against soy milk as its flavor, color and nutrient properties are very acceptable.

Nearly all the soybean preparations in Japan as marketed have to be cooked again or combined in recipes, but soy milk is ready for consumption as purchased. It is readily digested and cares for the infant and growing child's nutritive needs, being fully balanced, and serving as a protective food.

For the grown adult, milk cannot be said to be a necessity as in the younger years of life, but it does serve as a thirst quencher, and is a fatigue reliever, since on drinking it is readily absorbed, and yields a refreshed feeling.

Since milk is the starter food for all animal life, and among Western countries has come to be an indispensable part of the dietary, its use is rapidly being adopted by other nations of Asia and Africa so that it is destined to become a universal



HONORARY life membership award of the American Soybean Association is pinned on Dr. Miller by Mrs. Miller. W. D. Termohlen, U. S. agricultural attache at Tokyo, looks on.

article of diet. However, the economy of the world, with increasing population, cannot be adequately supplied by animals. But with the potential production of soybeans possible, milk can be a part of the diet of everyone. No single health promotion procedure offers greater promise of bringing adequate nutrition within the reach of every person without respect to age, color, race or financial ability.

Says Processing Tax Removal Has No Effect

THERE IS NO evidence to indicate that removal of the 3¢-per-pound processing tax on coconut oil has had any significant effect on U. S. consumption of the product, George A. Parks, deputy assistant administrator, Foreign Agricultural Service, U. S. Department of Agriculture, says. Parks spoke before the National Institute of Oilseed Products at Oaji, Calif.

Congress removed the 3¢ tax effective Oct. 1, 1957, until June 30, 1960.

"It would not be appropriate to say, though, that the approximately 12 months for which data are now available is a positive indication of what might happen in the future," Parks said. "During this period we have seen a substantial reduction in coconut oil production. This in turn has resulted in much higher prices than prevailed when the tax was first removed.

"I can assure you that the Department is not interested in maintaining

or reinstating taxes such as this, unless its removal is found to have a serious effect on our own fats and oils economy. After all, we want to see trade barriers removed both here and elsewhere whenever feasible. By such measures we lay the groundwork for expanded agricultural exports."

Parks said as of Dec. 31 export shipments of cottonseed and soybean oil under Title I, P. L. 480 since the inception of the program in 1954 represented over 45% of total export shipments of these oils.

"The proportion is trending upward. Last crop year two-thirds of our cottonseed and soybean oil was under P. L. 480. We expect total exports during the 1958-59 season to exceed 1 billion 50 million pounds with an even higher proportion being financed under Title I."

John F. Schoeni, Jr., Los Angeles Soap Co., Los Angeles, Calif., was elected president of the National Institute of Oilseed Products at the meeting.

Howard Boone, Cargill, Inc., San Francisco, was elected first vice president; B. T. Rocca, Jr., Pacific Vegetable Oil Corp., San Francisco, second vice president; and L. C. Brooks, Procter & Gamble, Los Angeles, secretary-treasurer.

Cargill Begins Use of Expanded Export Elevator

INITIAL OCCUPANCY by Cargill, Inc., of grain storage space that will treble the capacity of the Baton Rouge, La., giant export elevator has been announced by the grain firm and the Baton Rouge Port Commission.

Cargill manager Lloyd W. Graving said one-half of a 5-million-bushel expansion program has neared completion and was partially put into service the last week of February. He said the increased capacity, plus a recently finished high-speed marine leg for unloading river barges, makes the elevator "one of the largest and most efficient export operations on the Gulf coast."

Ernest Wilson, president of the Baton Rouge Port Commission, said the balance of the expansion, which will boost the elevator's total capacity to 7,500,000 bushels, will be completed and occupied in early April.

Cargill, lessor of the elevator from the Port Commission, designed the new addition as well as the original 2,500,000-bushel elevator, in cooperation with Barnard & Burke, Inc., consulting engineers for the Greater Baton Rouge Port Commission.

New Record World Fats Production

WORLD production of fats and oils in 1959 is tentatively forecast at an all-time high of 31.4 million short tons by USDA's Foreign Agricultural Service. This would represent a 4% increase from 1958 and a 3% increase from the previous record of 1957. With production at this level, per capita output in 1959 would be roughly 3% higher than prewar.

Expansion in 1959 is foreseen in all five categories of fats and oils. The most significant increase will be in edible vegetable oils, which are expected to attain a record high of 12.4 million tons. The major portion of the increase in 1959 is expected to be in the non-Communist areas of the world—largely in soybean, cottonseed, peanuts, and linseed oils and lard in the United States, peanut oil in India and Brazil, sunflower seed oil in Argentina, coconut oil in the Philippines, linseed oil in Canada, and butter in Europe.

However, in the Communist areas, significant expansion also is foreseen in peanut and sesame oils in China and sunflower seed oil and butter in the Soviet Union.

The outturn of edible oils in 1959—processed mainly from oilseed crops harvested in 1958—is foreseen at 6% above 1958. Production of all the edible oils except olive oil is expected to be somewhat above last year. The 1958 outturn was slightly above that of 1957. Sizable increases in peanut and soybean oils were offset in part by declines in sesame seed and sunflower seed oils.

Hawkeye Is Nebraska's Leading Soybean Variety

HAWKEYE was by far the leading soybean variety used by Nebraska growers in 1958, according to the state-federal division of agricultural statistics.

A recent survey of soybean growers who reported on varieties grown on their farms showed that Hawkeye was planted on 57.3% of the soybean acreage in the state. Hawkeye out-ranked other varieties in all districts.

Lincoln was grown on 15.2% of the acreage, followed by Clark with

14.6%, Harosoy 5.6%, and Adams 5.3%.

Other varieties such as Blackhawk, Bavinger, Chief and Chippewa made up only about 1% of the total.

NEBRASKA: SOYBEAN VARIETIES 1958
Percentage of soybean acreage planted to each variety in 1958, by crop reporting districts

Crop Reporting Districts	Soybean variety						
	Hawkeye	Lincoln	Clark	Harosoy	Adams	Other varieties	Unknown
Northeast	73.4	14.4	2.7	1.9	3.2	1.2	3.2
Central	55.9	1.9	.....	34.7	3.9	3.6	.....
E. Central	51.9	17.6	21.0	1.9	6.6	.6	.4
Southern ²	49.3	20.9	29.8	.....	.....	.....	.....
State	57.3	15.2	14.6	5.6	5.3	1.0	1.0

¹ Other varieties include Blackhawk, Bavinger, Chief, Chippewa and Richland. ² Southwest, south central and southeast districts combined because of small acreages.

Consumption of U. S. Margarine at New High

MARGARINE consumption in the United States last year reached a new record high of 9 pounds per person, the U. S. Department of Agriculture reports.

Consumption of butter, including distribution of USDA-owned butter, remained at the 1957 record low of 8.4 pounds per person.

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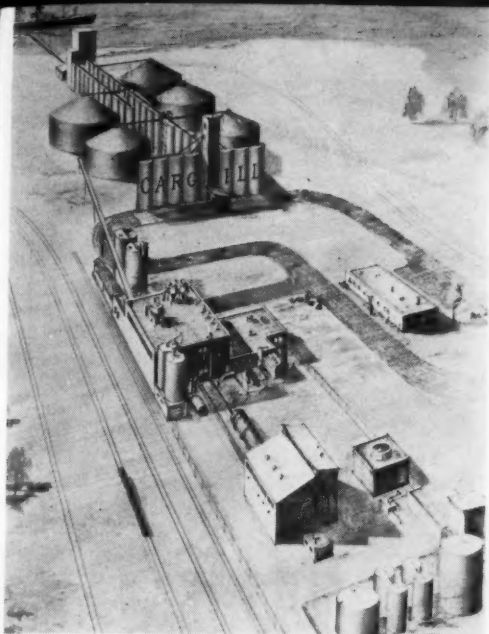
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ARCHITECT'S sketch of Cargill's planned South Norfolk, Va., plant.

Cargill Makes Start on New Norfolk Plant

CONSTRUCTION of a soybean oil-and-meal plant to boost 50% to 60% the bean crushing capacity of a five-state production area was begun at South Norfolk, Va., by Cargill, Inc., nationwide grain handler and processor.

The Minneapolis-headquartered company, at ground-breaking ceremonies shared by South Norfolk city officials and Virginia and Carolina state agriculture officials, simultaneously announced details of the processing plant and plans to expand its Norfolk grain export elevator from a present capacity of 2.25 million bushels to more than 4.5 million bushels. The soybean installation—a multi-purpose extraction, storage, domestic merchandising and exporting center—is being built adjacent to the elevator.

Fred M. Seed, vice president in charge of Cargill's vegetable oil division, said the new plant will be completed in time to handle this fall's soybean harvest. It will be of a solvent-extraction type designed for initial conversion of 7 million bushels of soybeans yearly to 10 million gallons of oil and 170,000 tons of meal. He estimated the present total crushing capacity of Virginia, Maryland, Delaware and North and South Carolina at about 12 million bushels.

Mayor Linwood L. Briggs, Jr., of

South Norfolk, who was accompanied by City Manager P. P. Davis, Sr., said the plant's location will make it highly competitive in supplying oil and meal by rail, truck and intercoastal barge, and added that export demand for oil, meal and beans—which last year was equivalent to 162 million bushels—"is well serviced from seaboard plants facing European markets."

J. H. Meek, Virginia state agriculture department director of markets, after pointing out that soybean production of the five states has increased 400% in 10 years to almost 30 million bushels annually, said the necessity for increased procurement to supply the new plant should mean "healthier markets and higher average bean prices for farmers throughout the area."

John A. Winfield, North Carolina agriculture department director of markets, said the plant will be "within easy and economical reach" of large-scale users of soybean meal, most notably the feed manufacturers serving the South's expanding broiler chicken industry, and added that vigorously competing transportation should also make for volume movement of soybean oil to users in metropolitan New York and New Jersey.

Benjamin S. Jaffray, recently appointed manager of Cargill's southeastern division with headquarters in South Norfolk, expressed the

company's pleasure "at the cooperation and welcome extended to us by the city and its officials."

Jaffray said the new oil plant will include: A preparation building containing cracking and dehulling equipment, bean conditioners and flaking rolls; an extraction building occupied by a percolator-like rotocel in which beans are exposed to solvent and recovery equipment to separate solvent from the resulting oil and meal; large meal-toasting and cooling units situated between the preparation and extraction buildings; meal grinders, sifters and scales housed in the preparation plant; steel storage tanks for meal and oil; equipment for weighing and loading both products on trucks and rail cars, and conveyors to move oil and meal to barges or ocean vessels at dockside.

Grain elevator expansion, much of which is required by accelerated soybean procurement plans, will include two 1-million-bushel steel tanks and 13 smaller tanks totaling 325,000 bushels.

At the outset, Jaffray said, soybean procurement will combine purchases from independent country elevators with stepped-up activity at Cargill-owned elevators at Seaford, Del., and Wilson, Washington and Belhaven, N. C. Further expansion of the bean-gathering system "is being planned but cannot yet be announced," he said.

Allied Mills to Build in Alabama

PLANS FOR the immediate construction of a new soybean solvent extraction plant on the Tennessee River at Guntersville, Ala., were announced by E. W. Lenz, president of Allied Mills, Inc., Chicago.

Mr. Lenz stated that the new processing plant of very latest design will be situated on the same property as the Wayne Feed plant erected at this location 2 years ago and will have a daily capacity in excess of 500 tons of 50% protein soybean meal, with storage capacity in excess of 1 million bushels. The principal contractors will be Ryan Construction Co., Omaha, Nebr., and French Oil Mill Machinery Co., Piqua, Ohio, who will supply the solvent extraction equipment.

According to Mr. Lenz, numerous locations for this new plant were considered, but Guntersville was selected because of its proximity to the fast growing feed industry in Alabama, Georgia, South Carolina and Florida, and because of the advant-

ages of water transportation. It was pointed out that the rapidly increasing production of livestock and poultry feeds at the Wayne Feed plants in Guntersville and Gainesville, Ga., was indicative of the growing demand for soybean meal in the Southeast.

Allied Mills was one of the early pioneers in the processing of soybeans. In recent years it has concentrated its soybean processing activities in its solvent extraction operation at Taylorville, Ill. The company has 12 feed manufacturing plants serving a 34-state area.

New Mexico Legislature Rejects Mellorine Law

MELLORINE recently lost a close fight for legalization in New Mexico when it was voted down in the House of Representatives by 33 to 31.

Cotton interests in New Mexico worked in behalf of the bill.



FORUM PANEL, left to right, A. C. Smith, Dr. Floyd Minor, Leon Holly, Dr. John Gray, L. H. Mosely, and Dr. E. E. Hartwig.



SPEAKER Dr. Robert W. French, Port of New Orleans, at the Tallulah, La., forum.

Hartz Suggests Reduced Bean Acreage

"AT A SUPPORT level of \$1.85 per bushel, I do not believe that we will have an increase in acres nationally and unless we have an equally good year our production next season could be 50 million bushels less," says Jake Hartz, Jr., Jacob Hartz Seed Co., Stuttgart, Ark. "If this is true, our prices could be support or possibly better at harvest time."

Hartz spoke before the third annual Tri-State Soybean Production and Marketing Forum attended by more than 500 soybean farmers from Louisiana, Arkansas and Mississippi, Feb. 26.

"We have been fortunate enough in the production of this crop in that there has been a buyer waiting for every bushel that we have produced. But that is not true today," Hartz said.

Hartz predicted a 70-million-bushel carryover this year. "This is a 2-months' supply and although it is the largest amount ever to be carried, it can hardly be counted as a surplus."

Hartz warned farmers that they should not rely too heavily on government in future years but "reduce acreage so that we will let production reach a leveling stage so that soybean farmers and industry can catch their breath and take a new look at where they are going."

Increase Export Outlet

The Port of New Orleans has begun an expansion and improvement program that will increase the capacity of the Public Elevator from 120 million bushels annually to 210 million bushels, Robert W. French, director of the Port, reported. He said the improvement would probably

cost between \$8 and \$9 million and should be completed by 1961.

Dr. French said that Baton Rouge, La., probably will add another 5-million-bushel elevator soon, making it one of the largest elevators on the Gulf Coast.

And Continental Grain Co. is constructing a 3-million-bushel elevator upstream from the Port of New Orleans and anticipates handling 20 to 30 million bushels of grain a year.

Better Varieties

John Gray, Louisiana State University agronomist, Baton Rouge, spoke on "Better Soybean Varieties."

He said: "Soybean research at the Baton Rouge station has consisted primarily of a breeding program involving the development and appraisal of promising soybean strains adapted to Louisiana conditions."

"More recently, the soybean research at the Experiment Station has been concentrated on the development of varieties of the crushing type having promise under Louisiana conditions. Seed yielding ability and a relatively high oil and protein content have been important goals."

"Several promising strains have been tested and have produced dependable yields of seed of good quality at Baton Rouge and some of the strains have shown promise in north and in central Louisiana in recent tests."

Damage by Insecticides

The possibility of damage to the soybean plant by insecticides was pointed out by Floyd D. Miner, University of Arkansas entomologist.

"Last year one series of plots was sprayed several times at weekly in-

tervals with DDT, as part of a study on insect damage versus yields," said Dr. Miner. "Several weeks later the plots were visited, and while there was great damage to the field as a whole from bean leaf beetle, the sprayed plots were free from damage."

"Closer inspection showed that the sprayed plots had put out no new growth since the spraying. Unsprayed plots had a large crop of young leaves, and it was on these that the beetles were feeding. How often this occurs, and under what conditions is not known."

"Several features of the soybean plant and its production may modify the usual insecticidal control procedures. First, this is not a high value per acre crop, so that any expense for insecticides must be carefully considered."

"Another feature is the high recuperative ability of the soybean plant, especially as regards leaf damage. The third consideration is the rank growth made by soybeans in fertile soils, which often makes it impossible to use tractor-mounted dusters or sprayers, and prevents good penetration of insecticides when applied by airplane."

Other speakers included E. E. Hartwig, agronomist at the Delta Branch Experiment Station, who talked on "Factors Affecting Soybean Production in the Delta," and

A. C. Smith, manager of the farm division, Deltic Farm & Timber Co., Epps, La., on "Comparison of Production Costs and Income of Commercial Corn and Soybeans." He reported his cost figures showed a \$4-per-acre income advantage for soybeans over corn in his area.

USDA Sees 7% Drop in 1959 Acreage

THE GOLDEN luster of the soybean has been at least temporarily dulled in the eyes of many soybean growers, according to the U. S. Department of Agriculture's crop reporting board. The interest and incentives that have brought sharp acreage expansions since 1950 have been significantly reduced by the combination of lower support rates and increased competition from corn and the conservation reserve program.

Growers' intentions as of Mar. 1 point to about 23.2 million acres to be planted alone for all purposes. This is 7% less than the 24.9 million acres planted last year, the record high. Final acreages planted will, of course, be dependent on the ability of farmers to fulfill planting intentions for the earlier seeded spring grains.

Decreases from last year are indicated for all states in the "Soybelt." The intended acreage in the heavy producing north central area is down 10% and the north Atlantic 6%, but the south Atlantic and south central areas expect 2% and 3% increases, respectively.

All states in the north central area, except Kansas, indicate less acreage

than last year with the sharpest declines reported in the northern and western areas. Minnesota, Iowa, Michigan, Wisconsin, South Dakota, and Nebraska show drops of from 15% to 25% from last year. Illinois, Indiana, Ohio, and Missouri report 3% to 5% smaller acreage may be planted, but Kansas indicates an increase of 2%.

The South Atlantic States generally show only moderate increases over last year with Delaware, Maryland, and Virginia indicating smaller acreages.

The south central area expects a 3% gain in acreage in 1959 with the sharp decline in Kentucky more than offset by planned increases in several states.



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PROSPECTIVE SOYBEAN PLANTINGS FOR 1959
Crop Reporting Board, AMS, USDA
Acreage planted¹

	Average 1948-57 1,000 acres	1958 1,000 acres	Indicated 1959 1,000 acres	1959 as percent of 1958
				Percent
N. Y.	8	7	8	110
N. J.	41	50	45	90
Pa.	49	46	44	95
Ohio	1,134	1,475	1,416	96
Ind.	1,889	2,297	2,182	95
Ill.	4,106	5,079	4,825	95
Mich.	137	280	224	80
Wis.	74	132	108	82
Minn.	1,628	3,129	2,534	81
Iowa	1,964	3,100	2,480	80
Mo.	1,584	2,294	2,225	97
N. Dak.	69	285	274	96
S. Dak.	123	266	200	75
Nebr.	106	210	178	85
Kans.	412	434	443	102
Del.	93	167	162	97
Md.	134	210	206	98
Va.	226	289	283	98
W. Va.	10	7	7	100
N. C.	420	524	540	103
S. C.	174	389	420	108
Ga.	89	115	117	102
Fla.	225	48	48	100
Ky.	206	220	189	86
Tenn.	298	366	366	100
Ala.	147	179	184	103
Miss.	561	938	957	102
Ark.	919	2,078	2,161	104
La.	123	170	185	109
Okl.	65	54	68	126
Texas	10	62	93	150
U. S.	16,822	24,900	23,172	93.1

¹ Grown alone for all purposes. ² Short-time average.

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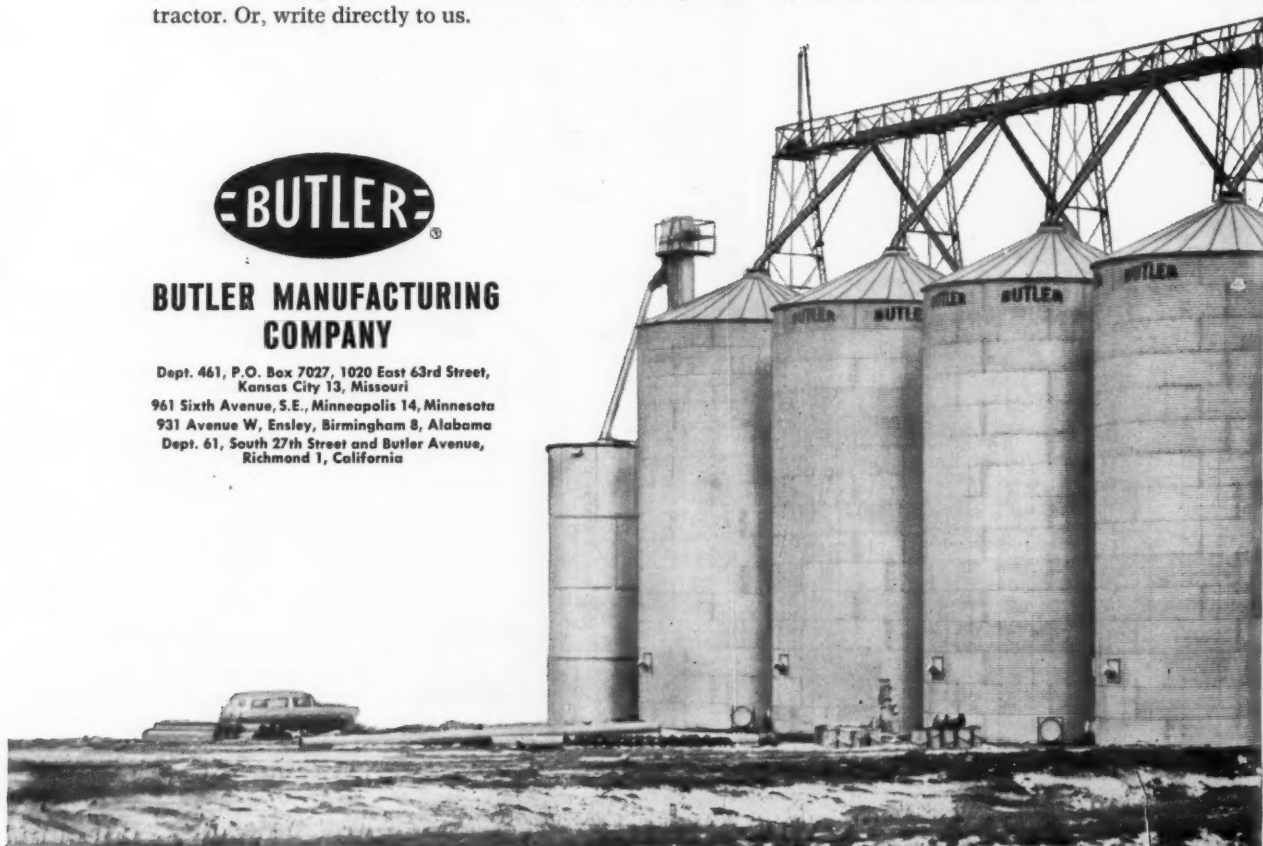
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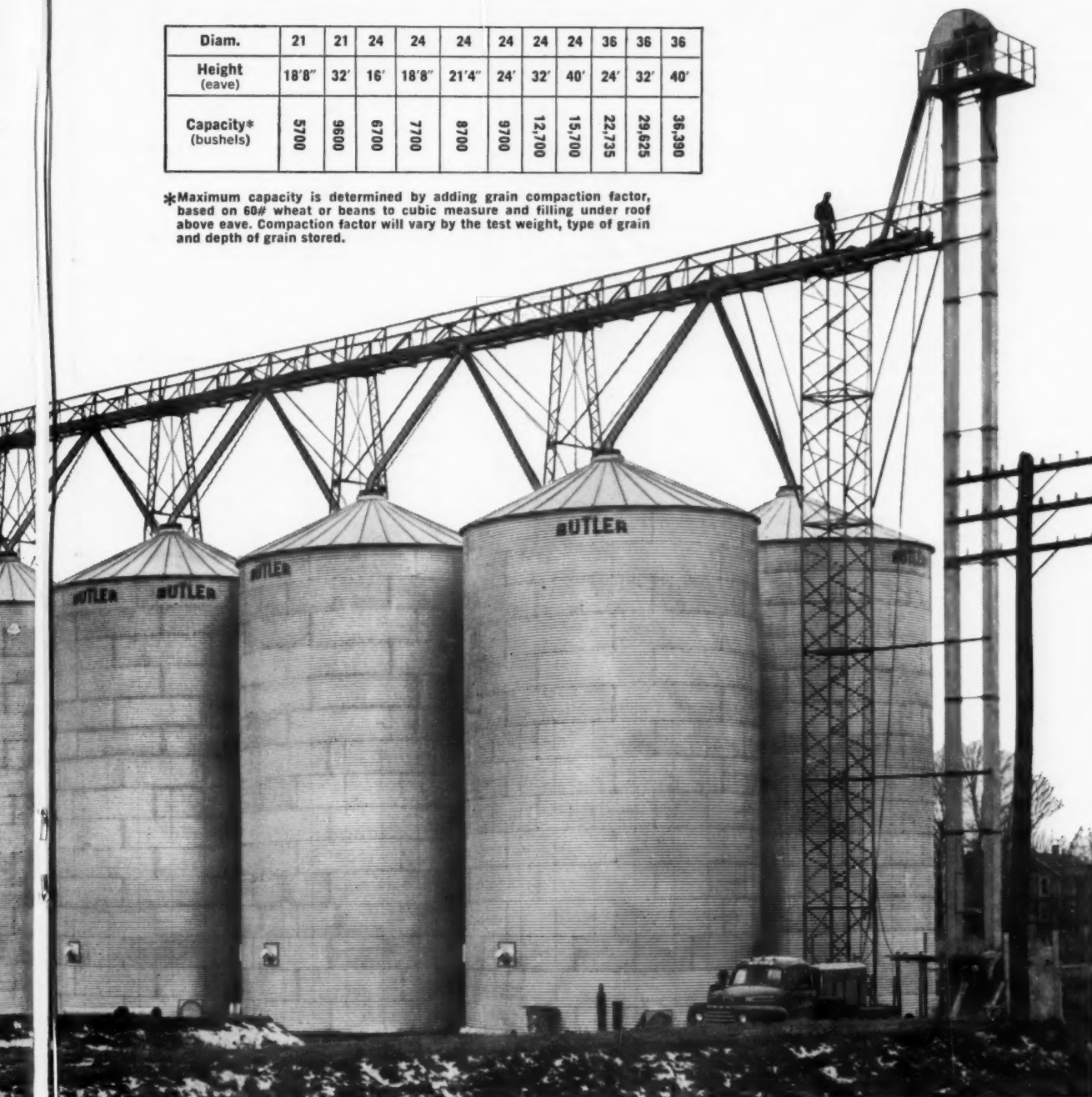


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*Maximum capacity is determined by adding grain compaction factor, based on 60# wheat or beans to cubic measure and filling under roof above eave. Compaction factor will vary by the test weight, type of grain and depth of grain stored.



World Record 5th Successive Year

WORLD PRODUCTION of soybeans in 1958 is estimated at 984 million bushels, about the same as the forecast of last Oct. 23, according to USDA's Foreign Crops and Markets. Production set a record for the 5th successive year.

The further sharp increase in U. S. production accounts for about 85% of the estimated 105-million-bushel increase from 1957 in world output. However, production in Mainland China is believed to have risen somewhat, and crops in most of the relatively minor producing countries, with exception of Japan, Nigeria and Thailand, either equalled or exceeded the previous year's total.

Canada's production set a new record, exceeding the previous record in 1957 by 2%. The increase was due to both a record acreage and a record yield per acre. The bulk of the crop is grown in Ontario.

The extent of the increase of soybean production in China-Manchuria is highly speculative. Official com-

munist figures show a 14% decline in acreage but a gain of over one-third in yield and one-fifth in total output.

Soybean production declined about 5% in Japan and over 10% in Thailand. Harvests in Indonesia and Taiwan were virtually the same as in the previous year.

In Brazil, the only surplus soybean producing country in South America, output in 1958 increased almost 10% from the previous year. In Nigeria, dry weather last year seriously damaged the crop. Nigerian Marketing Board's purchases, which represent the bulk of the production, are expected to be almost 45% less than purchases from the 1957 crop.

New Nematode Infestation

AN INFESTATION of the soybean cyst nematode has been found in Dunklin County, Mo., the first in that county, the Department of Agriculture reports.

No Yield Advantage Was Found for Gibberellin

SOYBEANS treated with gibberellin in 1958 tests emerged sooner, flowered earlier, and grew more rapidly during the first month, R. W. Howell, plant pathologist at the U. S. Regional Soybean Laboratory, Urbana, Ill., has reported.

However, this fast response to the gibberellin treatment may have unbalanced the plant's development so that yields on the treated plots were no greater and sometimes less than on untreated plots.

In Illinois tests, untreated soybeans averaged 37.2 bushels an acre when harvested with a regular commercial combine. Beans growing in gibberellin-treated soil averaged about the same. Plots receiving both foliage and soil treatments and the foliage treatment alone applied about 5 days after emergence also showed no effect.

But on plots given soil, foliage, and seed treatments, yields dropped 13 to 17 bushels an acre below the untreated soybeans. Plants in the treated plots also broke over more and bean losses during harvest were higher. Lodging was even more serious in Minnesota and Manitoba tests.

When the gibberellin treated soybeans emerged from the ground sooner and also formed the lower pods higher above the ground, research workers hoped that they would be able to save more beans when harvesting with a combine. But tests last year showed higher harvest losses on the treated plots.

However, Howell is not ready to completely abandon gibberellin tests. This year he plans to use slower acting formulations of gibberellin with various application methods.

Gibberellin is a plant hormone produced by a fungus that grows on rice and other crops. It has produced unusual growth stimulation on various crops.

Recommended Seeding Rates for Soybeans

THE FOLLOWING seeding rates for soybeans at various germination levels are recommended by L. E. Everson of the Iowa State College Seed Laboratory:

When the germination on the seed tag is 90% or over, 45 to 60 pounds per bushel; 80-89% germination, 50 to 70 pounds; 70-79% germination, 60 to 80 pounds; and 60-69%, 70 to 90 pounds.

SOYBEANS: ACREAGE, YIELD PER ACRE, AND PRODUCTION IN SPECIFIED COUNTRIES AND THE WORLD, AVERAGE 1935-39 AND ANNUAL 1957-58¹

	Acreage ²			Yield per acre			Production		
	Average 1935-39 1,000 acres	1957 1,000 acres	1958 ³ 1,000 acres	Average 1935-39 Bush- els	1957 Bush- els	1958 ³ Bush- els	Average 1935-39 1,000 bushels	1957 1,000 bushels	1958 ³ 1,000 bushels
North America:									
Canada	410	256	263	421.3	25.4	25.3	4207	6,508	6,649
United States ⁵	3,042	20,826	23,752	18.5	23.2	24.2	56,167	483,715	574,413
South America:									
Argentina		4			13.9			51	
Brazil		241	259		18.5	18.7		4,464	4,850
Europe:									
Italy	6	1		412.1	27.3		41	22	21
Yugoslavia	5	15	21	14.9	19.7	8.9	71	296	184
Other Europe (excl. U. S. S. R.)	95	125	125				1,065	760	690
U. S. S. R. (Europe and Asia)	7607						75,805		
Africa:									
Belgian Congo & Ruanda Urundi		15	15		10.4	10.4		154	154
Nigeria ⁸								538	300
Union of South Africa								67	
Asia:									
Turkey (Europe and Asia)	74	15	17	729.0	8.9		737	136	
China, Mainland	12,411 ⁷	28,000	24,000	16.7 ⁷	12.0	14.5	207,666 ⁷	335,000	350,000
Manchuria	8,992 ⁷			16.8 ⁷			151,294 ⁷		
Indonesia	9889	1,243	1,245	10.0	9.7	9.7	99,731	12,013	12,052
Japan	797	900	856	15.6	18.8	18.7	12,338	16,865	16,050
Korea, South	101,921	685		10.0	8.2	10.1	17,654	5,610	
Taiwan	17	101	99	9.0	12.0	12.6	147	1,215	1,249
Thailand	415	63	63	415.4	16.0	13.9	4232	1,009	882
Total excluding "Other Europe," U.S.S.R., China-Mainland and North Korea	5,670	24,535	27,440				87,180	533,950	623,925
Total world ¹¹	29,000	54,150	53,055				463,715	879,375	984,280

¹ Years shown refer to years of harvest. Southern Hemisphere crops which are harvested in the early part of the year are combined with those of the Northern Hemisphere harvested the latter part of the same year. ² Figures refer to harvested areas as far as possible. ³ Preliminary. ⁴ Average of less than 5 years. ⁵ Acreage harvested for beans. ⁶ Less than 500 acres. ⁷ One year only. ⁸ Purchases for export. Local consumption is small. ⁹ Java and Madura only. ¹⁰ Includes North Korea. ¹¹ Includes estimates for the above countries for which data are not available and for minor producing countries. Foreign Agricultural Service. Prepared or estimated on the basis of official statistics of foreign governments, other foreign source material, reports of U. S. Agricultural Attaches and other U. S. representatives abroad, and related information. Prewar estimates for countries having changed boundaries have been adjusted to conform to present boundaries, except as noted.

Two Steps for Holding Japan Market

By **SHIZUKA HAYASHI**

Managing Director, Japanese American Soybean Institute, Nikkatsu International Bldg., No. 1, 1-Chome Yurakucho, Chiyoda-Ku, Tokyo, Japan

WALTER SYKES, chief of the fats and oils section, U. S. Department of Agriculture, Quentin West, chief of the Far East analysis branch, USDA, Arthur Rollefson, assistant agricultural attache, David R. Farlow, American Soybean Association representative, and the writer visited one of the largest oil processors in Japan, the Nisshin Oil Mill, Yokohama, on Mar. 10.

This plant, with a continuous solvent extraction unit and a number of screw presses, is at present crushing soybeans, rapeseed, flaxseed, copra, cottonseed, sesame seed, castor seed, and sunflower seed. All are imported from overseas except rapeseed which is of Japanese domestic production.

The Cleaning Process

Of the various processes the writer was most interested in the cleaning. Soybeans are first sent through a set of cleaners where various types of foreign material, beans have to pass cause of the different types of foreign material beans have to pass through a number of different cleaners, not only once but four or five times before the engineer considers them safe for the subsequent processes that include steaming, crushing and extraction.

Stems of various sizes are removed by methods similar to those of some processors in the States. Then foreign material such as corn, cockleburs, morning glory seed, kinghead, unknown grass seeds, small broken beans and even stones are shaken off through sieves of different meshes. A magnetic separator is used to pick out metal. Finally, broken beans that are recoverable are removed from the foreign material.

Some important comments made by Mr. Ito, manager of the factory, and Mr. Sakai, chief engineer, are as follows:

1—Most foreign material can be eliminated in one way or another. But some material like kinghead cannot be taken out since it is the same size as soybeans. It can only be

eliminated by hand picking which of course is not practical.

2—Impurities in the soybean meal produced are usually reduced to 0.02%. Sometimes they exceed this figure. Such meal will then be subject to objections from the miso people, who use a certain percentage of soybean meal, but select it very carefully.

3—The existence of morning glory seed sometimes causes unexpected loss. Since it was found to be poisonous by the Ministry of Welfare in 1958, import of beans containing such seed is not permitted unless the seed is totally eliminated.

4—The time required for cleaning adds up to a tremendous waste.

Chinese soybeans need little cleaning. If the Japanese market is to be kept for U. S. soybeans, one of two steps will have to be taken:

1—Revise the present U. S. grading standards that allow 2% foreign material, or

2—Set up standards specifically for export to Japan.

No one believes that the trade between Japan and China will remain indefinitely in the present disrupted state. It may be resumed in the near future. Soybeans are one of the most acceptable commodities exported from China and are wanted by Japanese buyers. This competition will have to be faced.

All Japanese tradesmen are now using U. S. soybeans and are used to them. They are trying to establish the best methods for making their products with U. S. soybeans. Efforts should be made to place U. S. soybeans in a position that will allow them to compete without handicap with beans of other origin.

SOYBEAN COUNCIL OF AMERICA, INC.

1958 Olive Crop Was Cut by Knot

By **FRED R. MARTI**

Regional Director, Soybean Council of America, Inc. Rome, Italy

AN IMPORTANT factor contributing to last year's short olive crop in both Spain and Italy was the prevalence of olive knot, or what the farmer calls "tuberculosis of the trees." No effective spray programs are available to control this fungus as yet and pruning the infected parts is the recommended control measure.

When the fungus is in the inner branches and on the trunk of the tree, there is no control and the tree gradually dies.

The February 1956 freeze lowered the resistance of the olive trees, which gradually increased the intensity and areas infected with this fungus disease, according to reports from farmers. A recent field trip through southern Italy showed widespread olive knot over the area, which can be seen in the photo. Note the nodules on the branches.

Spain and Italy will require about 500,000 metric tons of vegetable oil this year, with an estimated 250,000 to 300,000 metric tons being supplied with U. S. soybean oil.

It is too early to predict what the



total of new crop olive oil will be in these countries this year. Weather, disease, and insect infestations are major factors and are much more significant than the every-other-year theory of good and bad harvests, which does not stand up under the production records of the past.

"Russia Can't Match U.S. in Food"

WITH THE PASSAGE of Public Law 480 by the 83rd Congress in 1954, which used counterpart funds for market development abroad, the Soybean Council of America, Inc., entered into agreements with Foreign Agricultural Service of the U. S. Department of Agriculture to tell the story of soybeans and soybean products, to encourage existing overseas markets and to develop new business for U. S. agriculture, Howard L. Roach, Council president, told the House agriculture committee in Washington recently. Coleman Crews, Keiser, Ark., representing the American Soybean Association, also appeared before the committee.

Since edible fats and oils can be substituted one for the other, "the Council feels responsible for cottonseed oil, lard, butter and other fats and oils as well as for soybean oil," President Roach told the committee. "We are, therefore, engaged in increasing the consumption of fats and oils.

"Since our first project started in Japan in cooperation with the Oregon Wheat Growers, we have written 15 market development agreements with Foreign Agricultural Service covering the following nations: Australia, Germany, Italy, Spain, Turkey, Poland, Mexico, Central America, Chile, Peru, Caribbean Area, Burma, India, Thailand, Pakistan, Greece and Israel.

Agricultural Fairs

"In past years we have shown in agricultural and trade fairs in Italy, Germany, Spain and Greece and during the current year will show in a total of 14 fairs in Europe, South America and Asia. This trade fair activity alone costs the Council between \$18,000 and \$20,000 per year in cold cash while our overseas cooperators contribute much more than this amount.

"This is all possible through cooperation with the Department of Agriculture and the Department of Commerce.

"The Council early learned that our overseas friends expect us to share some soybean meal and knowledge on how to use it in livestock and poultry feeding if we expect them to keep quiet while we ship our surplus edible oil to them

to compete with their own fats and oils. We are, therefore, holding schools, seminars and feeding demonstrations on how to use soybean meal efficiently.

"As a result, our dollar sales to Italy of soybean meal for example have risen from a little over 3,000 short tons in 1954 to over 70,000 tons in 1958. We have also held oil schools and seminars in Spain, showing and telling the trade and government officials about U. S. methods of grading and testing of vegetable oils. As a result, the government of Spain has recently removed restrictions on the sale and mixture of soybean oil.

"The job before us is stupendous. Without assistance from Foreign Agricultural Service, the task and cost would be too great for us to attempt.

"Most of us remember the slogan used during the last war to encour-

age agricultural production, 'Food will win the war and write the peace.' Food did win the war, but we have never given it the chance it should have to 'write the peace.' Russia is able to match us in guns, sputniks, rockets and in every other product that implies destruction. Russia is still unable to match us in food and the knowledge that goes with its production and processing. In this field they cannot compete with us today.

"Now is the time for us to use food to write the peace and demonstrate to the world the wonders that plenty and proper food can do. Market development, made possible through the continued availability of P. L. 480 funds, is the greatest single medium through which we can carry on a program for universal peace."

Council Exhibits at Verona Fair

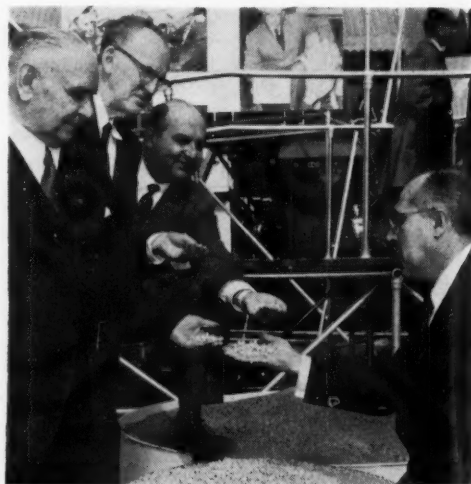
BALANCED FEEDING of livestock and poultry and the availability of high-quality feed grains and feed concentrates from the United States were stressed in the U. S. Department of Agriculture's new mobile exhibit which recently opened its European tour. Its first appearance was at the 61st Verona International Agricultural Trade Fair, Mar. 8-16.

The traveling exhibit, sponsored in cooperation with the Soybean Council of America and the Grain Producers Association, was the Department's 32nd market promotion display of U. S. farm products at the International Trade Fairs since the program began in 1955.

Thousands of Italian farmers and trade people observed how, through improved balanced feeding of livestock and poultry, they could produce "more meat, milk and eggs at less cost and in less time." The Italian government is encouraging a shift from wheat to livestock and poultry production. As this plan develops, Italy will need to import an increasing amount of feedstuffs to meet its requirements.

In the U. S. exhibit strong emphasis was placed on the use of soybean meal and grain sorghums, and on the availability of these high-quality feedstuffs from the United States. Italy is one of the top importers of U. S. soybean meal. In 1958 about

60,000 tons of soybean meal went to Italy or over half of the total exports of U. S. soybean meal to European countries.



J. R. SMYTH, head poultry science department, University of Maine (second from left), and Dominic Marcello, Soybean Council of America director for Italy (right), discuss the high quality of U. S. soybeans and particularly the use of soybean meal in livestock and poultry rations with Italian agricultural leaders, Prof. Bartolo Maymone, president National Livestock Experimental Station, Rome (left), and Dr. Djalma Balasini, agricultural inspector, Verona.

**SOYBEAN COUNCIL
OF AMERICA, INC.**

U. S. Soybean Oil Gains in Spain

By JAVIER DE SALAS

Director of Spanish Operations, Soybean Council of America, Inc., Madrid, Spain

WHEN THE Soybean Council opened an office in Madrid not quite 2 years ago, the attitude of the Spanish people and the olive oil interests toward soybean oil was frankly distrustful. The man on the street firmly believed that the reason for the imports of soybean oil into Spain was that huge amounts of olive oil were exported to the United States. The phrase, "Our liquid gold is taken to America," was used freely by everybody. Some intriguers even used it for political reasons as a sample of the mismanagement of the Spanish economy by the government.

The real reason for the imports was entirely different. Spain through increased per capita consumption and increased population had passed from having a surplus of oil to being in a deficit position so soybean oil had come to fill the gap between production and consumption.

Now let's study briefly how the situation has improved through the permanent and friendly contact that the Soybean Council has had with Spanish interests.

Through the seminars held by the Council in cooperation with various Spanish trade groups and the continuous press and radio campaigns, more and more people are finding out the real reason for the import

of soybean oil. The Spanish government has allowed soybean oil to be sold as such and the Spanish housewife is learning that good quality soybean oil is entirely suitable for cooking purposes.

The suspicion of the refiners has been dispelled. Dr. Edward M. James, technical consultant of the Soybean Council, has helped the Spanish refiners through his advice on the best methods of refining soybean oil. As time passes, we have

more and more people on our side who are convinced that:

1—Soybean oil does not compete with olive oil but rather imports of soybean oil will allow Spain to export more olive oil to increase our foreign currency earnings.

2—U. S. Public Law 480 is understanding and allows the purchasing country to decide the stage of processing of all goods bought.

3—Soybean oil can substitute if properly refined for any other edible oil. Good quality soybean oil is much better than poor quality olive oil.



RECEPTION at Madrid office of the Soybean Council. Mr. Navarro, chief of the Spanish Oil Syndicate (left), and De Salas.

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GRITS and FLAKES . . . from the World of Soy

Two Appointments by Hot Spot Detector

Hot Spot Detector, Inc., Des Moines, Iowa, announces the appointment of Bruce E. Fulenwider and O. Douglas Craig as assistant sales managers. Mr. Fulenwider, field representative for Hot Spot in Minneapolis, Minn., where he covered the terminal area of Chicago, Minne-

apolis and Duluth-Superior for the past 5 years, will assume managerial control of the eastern half of the United States.

Mr. Craig will be responsible for the sales activities in the western half of the United States. Prior to his association with Hot Spot, he was with National Vido Corp., Chicago.

R. L. Wilson, director of sales for Hot Spot, stated that the decision to divide the country into two distinct sales groups was brought about by the tremendous building program that has been evident in the industry during past years. "With two separate groups, the company can provide the trade with the fast, efficient technical knowledge so important during the actual construction period."

Carolina, Georgia and Florida, the heart of the largest soybean-producing area in that part of the South.

About 20 persons will be employed on a permanent basis, and production will be 150 tons of beans per day.

Associated in the enterprise are Stiles M. Harper, Grover F. Bowers, Jr., both of Estill, and others who already have in operation a 1,250,000-bushel grain elevator in Estill. The new plant will be located on land purchased by the company immediately adjacent to the grain elevator. The group also owns elevators at Allendale, Sumter and Camerons, S. C.

Coffman Promoted by American Express

The promotion of David Coffman to the post of vice president and general manager of the **American Express Field Warehousing Corp.** in New York has been announced by the firm's chairman Ralph T. Reed.

Mr. Coffman was president of William H. Banks Warehousees, Inc., Chicago, when that firm was acquired by American Express in July 1955. He became a director of American Express and was elected president in charge of the Central division. He will occupy his new post in the firm's New York headquarters.

He is the author of numerous articles on field warehousing widely published by financial magazines.



David Coffman

Amsco's McInnes Dies in St. Paul

Clyde C. McInnes, 54, died recently in St. Paul Minn., after a prolonged illness. Memorial services were held in St. Paul.



Clyde C. McInnes

Mr. McInnes was manager of the solvent extraction division of **American Mineral Spirits Co.**, 230 N. Michigan Ave., Chicago, Ill., and a former longtime resident of Evanston, Ill.

Six months ago he moved to St. Paul as manager of the northern division for American Mineral Spirits Co. He had been associated with this company for 30 years and was widely known in the vegetable oil extraction and protective coating industries.

Mr. McInnes was past president of the Chicago Paint, Varnish & Lacquer Association and a member of the American Oil Chemists Society.

Southern Soya To Build S. C. Plant

The **Southern Soya Corp.** will soon begin construction on a \$500,000 solvent extraction plant at Estill, S. C., for the processing of soybeans, R. M. Cooper, director of the S. C. State Development Board, has announced.

The new plant will service primarily the lower sections of South

Two Reelected to Ralston Purina Board

Shareholders of the **Ralston Purina Co.**, at their annual meeting recently reelected Board Chairman Donald Danforth and Director Harold Helm to 3-year terms. At the same time, they elected J. E. Streetman and David L. Grant to 3-year terms on the board of directors.

Mr. Streetman is marketing vice president of the company, and Mr. Grant is manufacturing vice president. They will replace L. C. Stevenson and G. M. Philpott, both retired Purina officers, as members

easy low-cost way to keep grain in condition



new AIR-O-VATOR®

portable HOT-SPOT REMOVER

Now you can avoid the trouble and expense of turning and moving grain. Air circulation produced by the Hot Spot Remover's high velocity, high static pressure booster fan cools the hot spots, dries the damp spots, controls moisture migration.

With screw down auger point and three foot stack sections, Hot Spot Remover can be placed quickly and easily at any point, to any depth in the grain pile.

SPECIAL PRICE TO GRAIN DEALERS ONLY \$13125

Rush Card for Complete Information

AIR-O-VATOR, INC.
Scottsbluff, Nebr.

World's Largest Producer of GRAIN AERATION EQUIPMENT

of the board of directors. In the regular board meeting, Mr. Stevenson and Mr. Philpott were elected as honorary directors. The other seven members of the board remain the same.

Holly, Oil Mill Pioneer Passes

Andrew P. Holly, a pioneer in the oil mill industry and a southern representative for the **V. D. Anderson Co.** for 25 years before his retirement in 1956, died at his home in Memphis, Tenn., recently.



Andrew P. Holly

While with Anderson Mr. Holly supervised installation of oil extraction machinery in many countries of the world including India, South America, Germany, Norway and Sweden. In recent years he was a field representative for Anderson covering the southeastern area.

He was a life member of the Tri-State Cotton Oil Mill Superintendents Association.

Riechman Crosby Hays Holds Industrial Show

The **Riechman Crosby Hays Co.**, Memphis, Tenn., held an open house industrial show recently at their plant at 223 S. Front St., which was attended by about 2,500 business and industry representatives in the Mid-south.

This show was the first of its kind conducted by the Memphis firm to acquaint industrial personnel with lines distributed and serviced by RCH. The machinery show was highly successful and other such shows are planned in the future.

Officers of the firm are E. J. Langley, vice president and general manager; Felix Tanner, vice president and sales; Lawson Wilhoit, vice president and public relations.

John B. McNatt has been appointed manager of the Little Rock, Ark., store of the **Southern Bearing & Service, Inc.**, Memphis, Tenn. He has had about 12 years experience in the bearing and power transmission distribution field.

Two new salesmen have been added to the sales force of the **Southern Bearing & Service, Inc.**, Memphis, Tenn., which increases the force to five salesmen. Bob Pence travels Memphis and a portion of

West Tennessee. Herbert Rodgers is city salesman. Lamar Vaughn has been promoted to fulltime purchasing agent.

W. K. "Bill" Jennings has been made sales manager of the industrial division, **Pidgeon-Thomas Iron Co.**, Memphis, Tenn. He has been with the firm for the past year and was formerly sales manager for the **Riechman-Crosby Co.** Robert Bold-ing has been made sales manager of the contracting division. He has been with **Pidgeon-Thomas** for 30 years.

Joseph Schmicher has been appointed plant manager at the **Borden Soy Processing Co.**, Waterloo, Iowa. A veteran of 16 years, he succeeds Paul J. Queroli, who died recently.

Officials of the **Langston Bag Co.**, Memphis, Tenn., have announced the formation of a new textile bag manufacturing firm in Puerto Rico, to be known as the **Langston Bag Co., Inc.**, of Puerto Rico. F. B. Langston is president and Graham Dudley is vice president and treasurer. Both are with the parent company.



Storage capacity totals more than 14 million pounds. Controlled heat enables us to move products through the tanks in cold weather.



Three tankwagons can be unloaded simultaneously.



Three barges are loaded and moved monthly.

SOYBEAN OIL

Movement from
Midwest Points to
New York Harbor
STORAGE

Twenty 47,000-lb.-capacity tanktrucks pick up soybean oil from Illinois, Indiana and Ohio points for delivery to Toledo.

Three 2,500-ton-capacity barges moved monthly from Toledo to New York harbor during the open season.

METROPOLITAN Fats and Oils, Inc.

Foot of East 22nd Street

Bayonne, N. J.

Toledo, Ohio Division
Foot of Congress Street

Phone Cherry 2-6253

BOOKS

Soy Milk Study Published in Netherlands

AN EXTENSIVE study of the technological aspects of soy milk and some of its derivatives has been made by Tan Boe Han for his doctor's thesis at the Agricultural University of Wageningen, Netherlands.

The author notes that the rapid increase of world population creates a difficult problem of food supply. Some countries have enough food to meet the requirements of their populations but many others do not.

Only in Europe and the Americas are the supplies of animal proteins large enough to meet minimum requirements. In Asia and Africa it is necessary to fall back on vegetable proteins of high nutritional quality such as the soybean.

The author observes that the amount of labor required to raise a pound of protein is low with soybeans as compared to other protein sources. One hundred hours of labor will produce 2,821 pounds of protein with soybeans. This compares with 1,002 pounds of whole wheat flour protein, 200 pounds of peanut protein, and 89 pounds of milk protein or 45 pounds of beef protein produced by 100 hours of labor.

Soy milk has a very long history, including its use as a starting material for various products as soy cheese, soy milk powder, soy yogurt, etc. The processing of soybeans for such purposes probably goes back at least to the Han dynasty in China, or well before the Christian era.

The aim of the work has been to obtain information on the technological aspects of soy milk and some of the products obtained from it. The author goes into considerable detail on various processes of manufacture. He has also made a study of the preservation of soy milk by heat treatment.

The author says the so-called vegetable varieties are superior for the manufacture of soy milk, and that it may be possible to find one variety that would be ideal for making evaporated milk.

Technology of Soymilk and Some Derivatives. By Tan Boe Han. Submitted in fulfillment of the requirements for the degree of doctor of agrarian sciences. 140 pages paper bound. In English. Agricultural University of Wageningen, Netherlands.

PUBLICATIONS

Soybeans Developing in Punjab, India

SOYBEANS before long are destined to play an important part in the dietary of the people of the Punjab, India, especially the hill population, according to Gursham Singh, Kheim Singh and H. C. Bedwa, of the Punjab Department of Agriculture.

The importance of the soybean is yet to be fully recognized in India and its cultivation is very limited. The Indian people are mostly vegetarian and the nutritional standards are extremely poor, so it is essential that their diet be supplemented with some protein-rich food. The soybean fits into the picture very well.

The Department of Agriculture of Punjab some time ago took up the development of the soybean, and selected the new edible variety Punjab Soybean No. 1, particularly suited to the Kangra Valley.

The merit of this variety is that its seeds are free from the general drawbacks of bitter taste and pungent, beany smell.

Since the land resources are limited the possibility of sowing soybeans in alternate rows with maize have been investigated.

Soybean Now Going up into the Punjab Hills. By Gursham Singh, Kheim Singh and H. C. Bedwa. *Indian Farming*, Vol. 7, No. 10, Jan. 1958, pages 32-34.

Truck Movement of Soybeans in Indiana

TRUCK shipments of corn, wheat, oats and soybeans accounted for 29% of purchases of these grains by Indiana country elevators for the period Oct. 1, 1956, to Sept. 30, 1957. Excluding grain retailed to farmers or used in feed, a little more than a third of the grain was shipped by truck and two-thirds by rail.

Truck Movement of Grain and Feed in Indiana. By Paul L. Farris. Research Mimeo EC-158. Purdue University, Lafayette, Ind.

Miscellaneous

Soybean-Foxtail Competition Under Varying Soil Moisture Conditions. By David W. Staniforth, Iowa State College. *Agronomy Journal*, Vol. 50, No. 1, Jan. 1958, pages 13-15.

The Influence of Soya Flour on Bread Doughs. III. The Distribution of the Papain-Inhibiting Factor in Soya-Beans. By E. M. Learmonth. *J. Sci. Food Agric.* Vol. 9, No. 5, May 1958, pages 269-273.

Root and Stem Rot of Soybean Caused by Phytophthora Sojae N. Sp. By M. J. Kaufmann and J. W. Gerdemann. Vol. 48, No. 4, Apr. 1958, pages 201-208.

Comparison of Different Generations of Soybean Crosses Grown in Bulk. By James H. Torrie. *Agronomy Journal*, Vol. 50, No. 5, May 1958, pages 265-267.

Supplement to Marketing Research Report No. 54, Comparative Economies of Different Types of Cottonseed Oil Mills and Their Effects on Oil Supplies, Prices, and Returns to Growers, 1954. Presents later statistics on costs and revenues of the mills. Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

Structural Studies on Soybean Hemagglutinin. By Shohachi Wada, Ph.D., University of Minnesota. *Dissertations Abstracts*, Vol. 18, No. 4, Apr. 1958, pages 1239-1240.

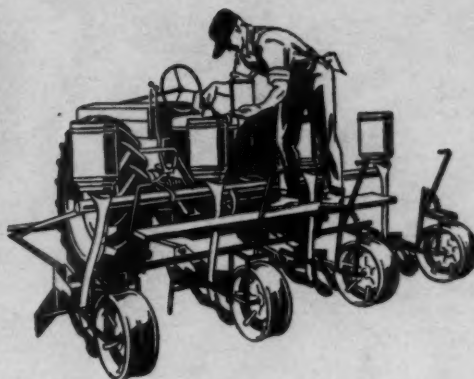
A Race of the Cotton-Wilt Fusarium Causing Wilt of Yelredo Soybean and Flue-Cured Tobacco. By J. K. Armstrong and G. M. Armstrong. *Plant Disease Reporter*, Vol. 42, No. 1, Jan. 15, 1958, pages 147-51.

Marketing Mellorine in Seven Trade Areas. Marketing Research Report No. 296. Marketing research division, Agricultural Marketing Service, U. S. Department of Agriculture, Washington 25, D. C.

Studies of a Seedling Blight of Soybeans and the Etiology of the Causal Fungus, Diaporthe phaseolorum var. caulivora. By John Dunleavy. *Journal Paper No. J-3382* of the Iowa Agricultural and Home Economics Experiment Station, Ames, Iowa. *Proceedings of the Iowa Academy of Science*, Nov. 20, 1958.

A New Method of Obtaining Systemic Infection of Soybeans by Peronospora manshurica (Naoum.) Syd. *Journal Paper No. J-3399* of the Iowa Agricultural and Home Economics Experiment Station, Ames, Iowa. *Proceedings of the Iowa Academy of Science*, Vol. 65, Nov. 20, 1958.

NOW!



"ON-THE-FARM" SEED TREATMENT FOR SOYBEANS

New ORTHO Soybean Seed Protectant developed specifically for planter box treatment.



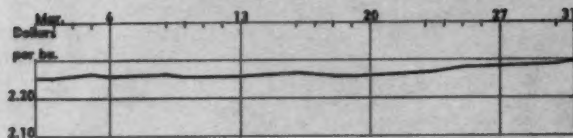
- No seed treating equipment needed—treat seed right in the planter box (as shown above).
- Saves time and money by planting and treating at the same time.
- Reduced handling of seed lowers the percentage of cracked or "split" seed planted.
- Easy handling—a measuring cup supplied in each can.
- Built-in lubricant aids seed flow and lubricates moving parts of planter.



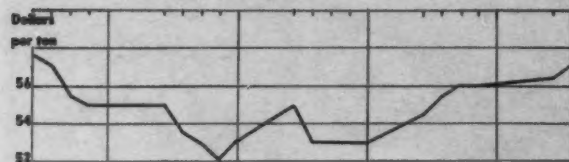
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A Subsidiary of California Chemical Co.
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Helping the World Grow Better

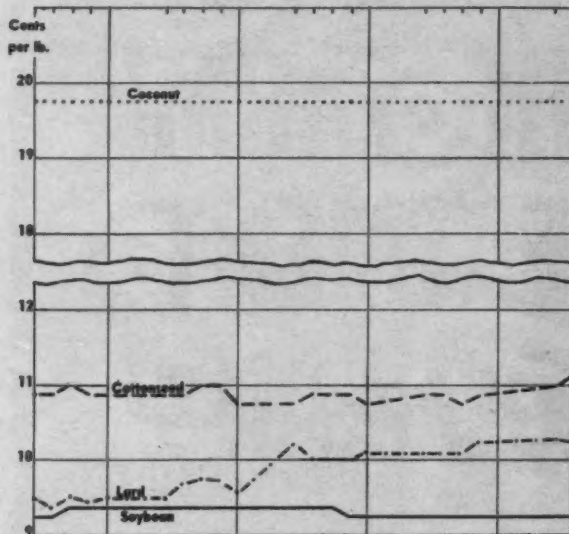
DAILY MARKET PRICES No. 1 Cash Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur



Crude Vegetable Oils and Lard



March Markets

THE MEAL MARKET moved sharply up and down during March, with soybeans largely following in sympathy.

Soybean oil worked up $\frac{1}{8}$ ¢ for a time, but there was no net change in the oil price during March in spite of a government forecast of increased total exports in 1959.

Reasons for the drop in the meal market the forepart of March were a glut of meal due to a slowdown in movement caused by heavy March storms and blocked highways, and a switch by mixer to types of feed using less meal.

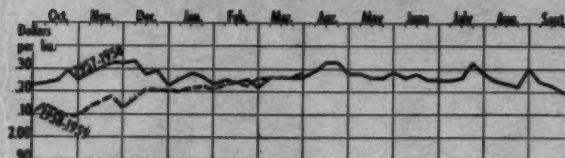
Later, the market advanced when the glut was worked off and the mixers stepped in to replenish their inventory. Also, there was talk of a cutback in meal production. Processors said the conversion ratio had become unprofitable.

Other factors affecting March markets included:

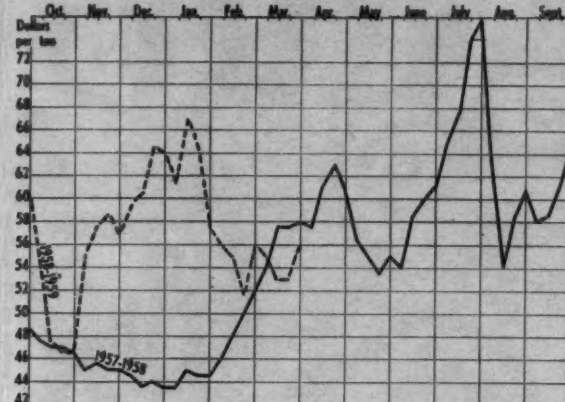
1—The continued heavy rate of processing, with the total running almost 30 million bushels ahead of last year.

2—But processors were maintaining their supplies well and there was little indication of great tightness in

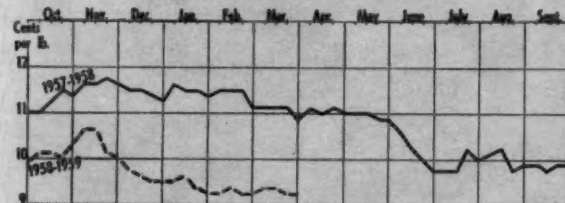
TRENDS AT A GLANCE (Weekly Close) No. 1 Cash Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur



Crude Soybean Oil, Tankcars



supplies before Commodity Credit Corp. beans become available.

3—Reports in the trade of a prospective severe cutback in soybean acres, which was not entirely borne out by March planting intentions.

BYPRODUCTS. The price of soybean fatty acids remained at $15\frac{1}{4}$ ¢ per pound during March. Acid soybean soap stock advanced from $4\frac{1}{4}$ ¢ to $5\frac{1}{4}$ ¢, and raw soybean soap stock from $1\frac{1}{2}$ ¢ to $1\frac{3}{4}$ ¢ per pound.

1957 AND 1958 SOYBEAN CROPS

Total soybean placed under price support as of Feb. 28.....	1958-59 138,868,232 bu.	1957-58 89,691,550 bu.*
Total soybeans withdrawn from support as of Feb. 28.....	3,033,683 bu.	627,474 bu.*
Soybeans crushed Oct. 1-Mar. 1.....	172,097,000 bu.	143,922,000 bu.
Total soybeans inspected for overseas export plus lake shipments to Canada Oct. 1-Mar. 27	59,919,876 bu.	56,028,310 bu.
Balance on hand Mar. 1 for processing export or carryover	337,045,000 bu.	266,338,000 bu.

*Feb. 15



Amazing Versatility

**F. H. Brunning Pty, Ltd.
Melbourne, Australia**

"Our Clipper Debearder has proved excellent for de-bearding barley and clipping oats. We get less oat hulls than when we were using the usual Oat Clipper."

—John K. Purves

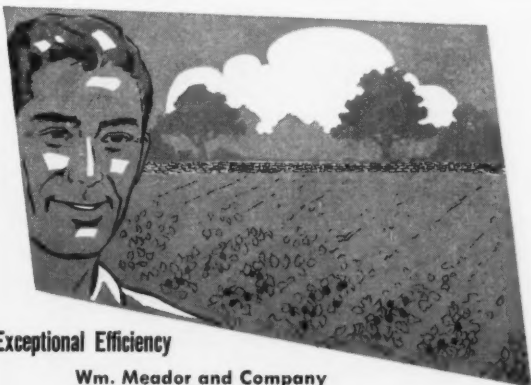


Highly Profitable

**Norris Grain Company
Elizabeth City, North Carolina**

"In January of '57, we purchased your Super 2248-D Grain Cleaner for our Elizabeth City Terminal. During its first 5 days we cleaned over 100,000 bushels of soybeans which contained a high percentage of splits. We were able to reduce the F.M. to even below one percent. We are completely satisfied with this fine machine which paid for itself in the first week."—

Jim Howell



Exceptional Efficiency

**Wm. Meador and Company
Mobile, Alabama**

"In all of our years of experience, we have never had an elevator or a cleaner that worked more satisfactorily than yours, and we look forward in future years to using more of your equipment."—Wm. Meador, Jr.

further proof that

Clipper

EXCELLENCE

**has 'round the
world acceptance**

From more long-time Clipper users . . . in foreign lands and in America . . . come reports of lasting satisfaction and lowest cost operation of Clipper equipment.

Ready for mailing to you is our fully illustrated literature, giving capacities, sizes, et cetera. It explains how Clipper equipment can earn more profits for you. Why not write for it today?

A. T. FERRELL & CO.
Saginaw, Michigan



NEW PRODUCTS and SERVICES

PNEUMATIC CONVEYING SYSTEM. Henry Simon Ltd. of Stockport has just released details of a radically new system of pneumatic conveying which they claim to be far superior to present conventional methods. The Simon Sonic conveying system, as this new patented development is called, is now being installed in plants in this country and overseas.



When materials are conveyed pneumatically between different parts of a plant, it has hitherto been necessary to provide a separate compressor for each blowing line. This had many disadvantages, such as multiplication of driving motors, with consequent lower power factors and efficiencies, and higher installation and maintenance costs.

Simon scientists wanted a valve which would permit any number of lines to be powered from one compressor without any interaction. The valve itself must be simple, reliable, economical and automatic. To meet this specification, the Sonic Valve was developed.

Wide interest is being shown in this new Simon development which promises to considerably widen the scope and application of pneumatic conveying systems. The valve is made of aluminum. For further information write Soybean Digest 4f, Hudson, Iowa.

DRYER LEASE PLAN. Daycom, Inc., manufacturer of Arid-Aire Grain Dryers, announces two new long-term lease plans for the Model 4 and Model L Dryers.

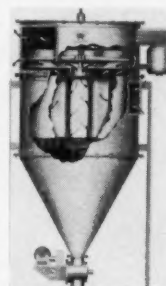
Arthur C. Bredesen, Jr., general manager of the company, states the advantages of these long-term lease plans for the elevator include preservation of working capital, removal of the necessity to borrow against the regular line of credit to make capital improvements, quick depreciation and low-cost financing.

Mr. Bredesen says their new plans permit the elevator to rent an Arid-Aire Dryer and at the end of the fifth year the customer will have the option to buy. A big advantage to the customer is the money he saves on interest payments.

Arid-Aire officials believe their new plans will make it possible for more elevators to provide their customers with the important advantages of efficient, dependable, economical grain drying.

For complete information write Soybean Digest 4e, Hudson, Iowa.

DUST FILTER. A low cost dust filter unit that combines the features of a cyclonic dust separator and incorporates the high efficiency of a dust filter has been announced by the Day Co. The new design is a modification of the Day "RJ" dust filter. It provides efficiencies up to 99.99%, the company says.



The "RJ" employs the Hersey principle of high velocity reverse air cleaning but differs from the usual Hersey principle in that dust is deposited on the outside of the filter sleeves. An inner liner surrounds the filter sleeves and the dust laden air travels in a cyclonic path separating the heavy dust particles before the air carrying the "fines" enters the filter chamber.

The unit has many applications. It is especially suited for separating the product from the airstream in pneumatic conveying systems.

For a copy of Bulletin 560 write to Soybean Digest 4b, Hudson, Iowa.

SIX-ROW EQUIPMENT. John Deere has announced a complete line of six-row equipment for farmers of cultivated crops in both the North and South.

Introduced as the first complete line of six-row equipment in the field, the new John Deere bedders, corn and cotton planters, and cultivators are all designed to take full advantage of today's more powerful row-crop tractors, according to the company.

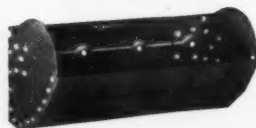
Here is the John Deere 60 Series Quik-Tatch Reducible cultivator that provides six-row capacity of up to 100 acres a day, plus one-man ease of attaching and detaching. Wings can be folded for transport or removed for four-row work.

For further information write Soybean Digest 4a, Hudson, Iowa.

GRAIN STANDARDS. Burrows Equipment Co. announces it has available to the trade a new large wall chart showing all of the latest U. S. Department of Agriculture grain grading standards including new revised oat and corn standards.

For copies write Soybean Digest 4c, Hudson, Iowa.

**A Sales Record of More Than
15 MILLION
SUPERIOR
ELEVATOR CUPS
DP-OK-CC-V**

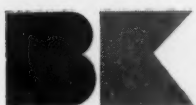


For Better Results—Longer Life—More Capacity

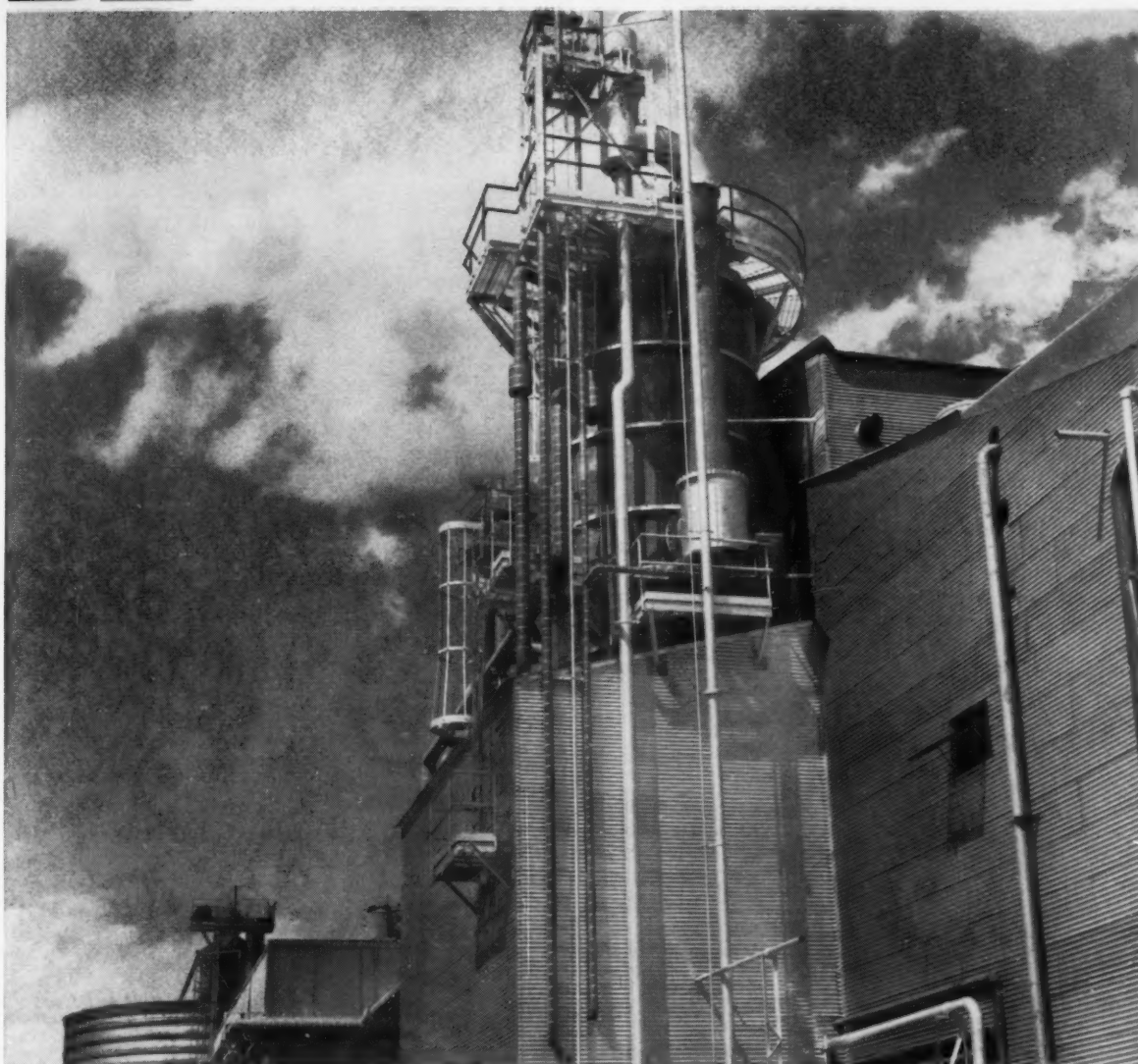
"Elevator Cups Is Our Business, Not A Sideline"

K. I. WILLIS CORPORATION
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Additional copies of the
**1959
Soybean Blue Book**
\$2
to members
Order from
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Hudson, Iowa



Blaw-Knox builds for Honeymead . . . a continuous, high vacuum deodorization unit with a daily capacity equivalent to 8% of all the soybean oil processed in the country. This modern unit features a special soaking section that guards against flavor reversion.



World's largest deodorizer upgrades 600,000 pounds of soybean oil a day

With this giant deodorizer Honeymead Products Company completes the third step of an expansion program that started in 1953. At that time Blaw-Knox designed and built a 500-ton-per-day Rotocel solvent extraction plant for this progressive company. By 1956 facilities were expanded and production climbed to a record breaking 1200-tons-per-day. Now this pace setting deodorizer makes Honeymead a leader in large scale continuous refining of soybean oil into edible products.

Such pioneering projects are typical of the over 100 fats and oils plants engineered and built by Blaw-Knox. To see how this experienced technical

know-how works for you in your own plans for new processes, plant expansion or modernization, contact our engineers.

For a concise survey of Blaw-Knox's complete engineering and construction services for this booming industry, send for Bulletin 2515. Blaw-Knox Company, Chemical Plants Division with headquarters in Pittsburgh. Branch offices in New York, Chicago, Haddon Heights, New Jersey, Birmingham, Washington, D.C. and San Francisco.

for plants of distinction . . .



Another Half Billion Bu. Crop Seen

SOYBEAN EXPERTS in the Department of Agriculture are expecting a crop of 500 million bushels or more this year, based on indications shown in the March planting intentions report.

The crop reporting board estimates that 23,172,000 acres of soybeans will be planted this year. This is a reduction of 1,728,000 acres below last year's plantings of 24.9 million acres.

The board's estimate of planted acres for soybeans in March tends to be a little low when compared with final figures. The estimate could be, officials say, as much as 1 million acres off.

The planted acreage yield for soybeans, adjusted for trends in production, is 22 bushels per acre. Applied to presently indicated plantings, this yield would produce about 510 million bushels of soybeans. With a carryover now estimated at 75 million bushels, total supply of soybeans under present indications would not be too far away from that of last year.

Most of the decrease in soybean acres is coming from the Cornbelt, if the March figure on plantings holds reasonably close to the actual. The total reduction indicated in soybean acres nationally amounts to 1,728,000. In the Cornbelt alone the apparent shift is 1,890,000 acres from

soybeans. Most of the other states show little change or some increase.

In most of the Cornbelt states corn is attracting acreage from all of the other crops. Officials familiar with the area here think soybeans will go no lower than indicated in the March report, and may go higher. Weather during the first half of May will be a big factor. To the extent that corn plantings may be smaller than the nearly 84 million acres indicated, soybeans will take up the slack, officials here believe.

If approximately the same proportion of total acres is harvested this year as in 1958, 22 million acres would be combined. At 5-year average yield by states, this would produce about 475 million bushels of soybeans. Officials don't think averages will apply this season, however.

Peak Food Production

Officials can see a new peak in production of food fats and oils coming in the 1959-60 marketing year.

Lard production is estimated tentatively at around 8% above last year. A cotton crop 12% to 15% bigger than last year's is suggested by the report on the number of farms electing to overplant their allotments by as much as 40%. Counting carryover, the total supply of soybeans should be big enough to permit a crush the size of this year's record.

A new high in exports of vegetable oils will be reached this year, officials believe. They're now projecting shipments—the big bulk of it under the P. L. 480 program—of more than 1.4 billion pounds. This is for the two oils—soybean and cottonseed—alone.

Humphrey's Bill

P. L. 480 will be extended in some form this year. Just how remains to be seen. Senator Hubert Humphrey of Minnesota has a new "Food For Peace Act" which would step up the use of so-called food surpluses as "an arm of our international relations."

One section of the new bill would direct greater use of edible oils in exports. It would be mandatory upon the Secretary of Agriculture to dispose of any holdings of edible oils by way of donation through estab-



By PORTER M. HEDGE
Washington Correspondent for
The Soybean Digest

lished relief agencies in international feeding programs.

The secretary in addition would be authorized to purchase for donation such amounts of edible oils as he determines would maintain support levels on soybeans and cottonseed without the need for government acquiring these commodities.

The Humphrey bill calls for a 5-year 480 program. It would authorize use of a third more of surplus commodities—a total of \$10 billion in value for the period. The bill also would take administration of P. L. 480 out of the Department of Agriculture and set up administration at the White House level.

It's doubted that the President would sign a bill taking administration of the program away from Secretary Benson, but a modified version may pass. P. L. 480 expires Dec. 31, 1959.

Most Illinois Beans Direct to Processors

ABOUT 25% of all corn and 70% of all soybeans shipped by Illinois elevators in 1954 were shipped directly to central Illinois processors, according to C. P. Schumaier, assistant professor of agricultural economics at the University of Illinois. Schumaier says about 40% of corn and 80% of soybean elevator shipments in the east central Illinois area went directly to processors in 1954. He spoke at the recent Agricultural Industry Forum at the University.

Inspected receipts of soybeans in downstate Illinois have increased 100% since 1945.

There has been a rapid growth in Illinois river traffic since 1945, and further growth is indicated, according to Schumaier. The bulk of the traffic has been to Chicago, but beginning in 1950 considerable vol-

NODOGEN'S
Mr. Fixo
PRE-TESTED INOCULATION
SOY BEANS

Mr. Fixo

says SELL
NODOGEN the
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NODOGEN LABORATORIES
2750 W. 35th St., Chicago, Ill.

umes moved south for export and domestic use.

Domestic use of barge grain is increasing and will probably offset any decrease in export volumes. If a large export demand develops at Chicago as a result of the seaway, the proportion of Illinois River grain moving to Chicago will increase.

Illinois Leads in Producing for Market

ILLINOIS, more than any other state, produces its grain and soybeans for the free market and must concern itself with the health of that market, says C. M. Roberts, regional manager of Cargill, Inc. Roberts spoke before the recent Agriculture Industries Forum at the University of Illinois.

Roberts noted that last year Illinois, the nation's largest soybean producer, placed only 12% of its harvest under loans. Minnesota piled 25% of its production in government bins, and Iowa turned over almost 50% last year.

"This marketing-for-sale orientation results from the extraordinary efficiency of Illinois farmers, from

the excellence of Illinois soil, and from the intensity with which that soil is cultivated. It results also from your fortunate transportation and merchandising pattern, with the great Chicago market in the north to serve eastern U. S. consumption and overseas consumption via the St. Lawrence seaway, and the great St. Louis market in the south serving foreign buyers in Europe, South America and the Orient.

"Giving access to these markets, you have railroads with rates far more desirable than those in most surrounding states; you have low-cost, two-way water transport on the Illinois River, and you have an unexcelled motor truck network.

"Your transportation and marketing facilities put Japan—which is almost exactly on the other side of the world from Illinois—in intimate touch with each of you. For Japan prefers Illinois soybeans, and in recent years has made itself one of your most important customers.

"And closer to home, this same network makes the Deep South your customer, with ever-greater quantities of Illinois grain feeding the

booming poultry and livestock industries of Georgia, Alabama and Louisiana.

"When the day comes that government-controlled agriculture is abandoned, your competitive position will be among the strongest in the nation."

Giant Foxtail Reduces Yields 17 Bu. per Acre

GIANT FOXTAIL can and does take giant-sized bites out of corn and soybean yields, according to current University of Illinois tests.

E. L. Knake, working with the UI agronomy department, reported that results from 2 years of a 3-year research study shows that yields decrease as foxtail stands increase. Knake presented his report during the Illinois custom spray operators' training school in Urbana.

Citing figures taken from the study, Knake said that corn plots with no foxtail yielded up to 26 bushels more per acre than plots with foxtail stands. In soybean plots without foxtail, yields increased up to an additional 17 bushels per acre.

 <p>8 Blade, Open End Rotor</p>			<p>FOR EFFICIENT DUST CONTROL OR PNEUMATIC CONVEYING</p>	
 <p>Large Oversize Sealed-for-Life Bearings</p>			<p>✓ THESE PRATER AIRLOCK FEATURES</p>	
 <p>Rugged, Dependable Construction</p>			 <p>Leak-Proof Dust Seals</p>	
 <p>Flexible Rubber Wiper Strips</p>				
<p>PRATER PULVERIZER COMPANY 1527 So. 55th Court • Chicago 50, Illinois</p>			<p>Send for Valuable 12-Page Bulletin P-58 "How to Select a Rotary Airlock Feeder"</p> 	
<p>See PRATER SPACE-N-TIME ENGINEERS at the NATIONAL FEED SHOW, BOOTHS 112-113-132-133</p>				

- MARKET STREET -

We invite the readers of THE SOYBEAN DIGEST to use MARKET STREET for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here. Rate 10c per word per issue. Minimum insertion \$2.00.

HAVE GIANT SIZE CONNERVILLE blower with 8-inch discharge, suction same size. Will do fabulous job of moving grain fast. Will sell as is where is at a bargain price, ready to move. Write Soybean Digest, Box 319-F, Hudson, Iowa.

WANTED: FLAKING AND CRACKING rolls, meal coolers and driers and roller mills. Soybean Digest, Box 319-J, Hudson, Iowa.

FOR SALE—CERTIFIED AND registered soybean seed, Harosoy, Chippewa, Grant, Comet, Acme and Norchief. Also Minhafer and Burnett oats. J. H. Schrooten, Fairmont, Minn.

FOR SALE—MISSISSIPPI REGISTERED and certified Lee. Will treat, free storage, insurance till planting time. These are quality, low moisture, high germination, low mechanical injury. These factors determine yield. Bard Selden, Tunica, Miss.

FOR SALE—ANDERSON Expellers and French screw-presses, cookers, driers, 5-high, 48-inch crushing rolls, 36-inch attrition mills, sewing machines, hammermills, cracking rolls, filter presses. Ray L. Jones, 1923 Hayselton Drive, Jefferson City, Mo.

FOR SALE—FORDS PORTABLE feed grinder with mixers. Have one exceptionally good used outfit. H. L. Myers, Route No. 3, Alliance, Ohio. Phone TA3-7209.

STEEL GRAIN BINS—6,744, 9,766, 12,388, 15,792 and 22,591 bushel sizes available. For particulars and prices write: Midwest Steel Products Co., 121B Railway Exchange Bldg., Kansas City 6, Mo.

ANDERSON & FRENCH PRESSES
AUXILIARY EQUIPMENT FOR
SOYBEANS AND OTHER
OIL SEEDS
PITTOCK & ASSOCIATES
GLEN RIDDLE, PA

HELP WANTED—EXPPELLER OPERATOR for oil mill located in Florida. Will supply housing. Good working conditions. State experience and salary. Soybean Digest, Box 319-S, Hudson, Iowa.

SEED DIRECTORY

ARKANSAS

Burdette—Hale Seed Farms, 8,000 bu. registered Hale Ogden No. 2.
Scott—Robert L. Dortch Seed Farms, 9,500 bu. registered and certified Dortchsoy 67A, 25,000 bu. registered and certified Dortchsoy 2A, 18,000 bu. registered and certified Dortchsoy 31, 14,000 bu. blue tag certified Lee, 7,500 bu. blue tag certified Jackson.

Stuttgart—Jacob Hartz Seed Co., P. O. Box 109, registered and certified and uncertified Jackson, registered and certified and uncertified Lee, certified and uncertified Ogden, certified and uncertified Dorman.

Stuttgart—Spicer Brothers, 730 S. Grand Ave., 2,500 bu. certified Lee.

Wynne—Harlan H. Holleman, Rt. 1, 8,000 bu. blue tag certified Lee, 2,000 bu. blue tag certified Ogden.

ILLINOIS

Carthage—Huey Seed Co., 2,000 bu. each Harosoy, Hawkeye, Adams, Lincoln, and Clark, all both certified and noncertified.

Farmer City—Farmer City Grain Co., 201 West North St., certified and uncertified Clark, certified and uncertified Lincoln, certified and uncertified Adams, certified and uncertified Harosoy, certified and uncertified Hawkeye.

Ridgway—Jones Farm Store and Elevator, Phone 83R3, certified and non-certified Clark.

INDIANA

Evansville—J. A. McCarty Seed Co., 526 N. W. 4th St., certified and uncertified Clark, limited quantity of certified and uncertified Wabash, limited quantity of uncertified Perry.

Lucerne—Lester Elliott, Rt. 1, 1,000 bu. certified Harosoy.

Pendleton—Walter Stohler, Rt. 3, 1,100 bushels certified Harosoy.

IOWA

Duncombe—W. K. Powers, Rt. 1, 2,000 bu. certified Hawkeye, germination 93%.

KANSAS

Lawrence—Emil W. Heck Farms, Rt. 3, 850 bu. certified Clark.

MICHIGAN

Saginaw—P. M. Boese & Sons, 4735 East Rd., 2,000 bu. certified Chippewa, 600 bu. certified Blackhawk.

MINNESOTA

Bird Island—A. A. Ziller, 80 bu. certified Acme, 150 bu. certified Comet, 400 bu. certified Norchief, 800 bu. certified Grant, 1,000 bu. certified and registered Chippewa, 400 bu. certified Ottawa Mandarin, 200 bu. certified and registered Capitol.

Lake Crystal—Wayne Othoudt, 200 bu. certified Grant, 225 bu. registered Chippewa, 450 bu. certified Comet.

MISSISSIPPI

Ruleville—T. L. Milburn, Milburn Farm, P. O. Box 4, 5,000 bu. Mississippi certified blue tag Lee.

MISSOURI

St. Louis 24—Cypress Land Farms Co., 8129 Delmar, 1,000 bu. noncertified Lee, 2,000 bu. noncertified Ogden, 2,000 bu. noncertified Clark, 500 bu. noncertified Perry, 500 bu. noncertified Harosoy.

NEBRASKA

Elk City—Wahlgren Seed Farms, 600 bu. certified Clark.

Hastings—Carl and Wendell Starr, Rt. 2, 3,000 bu. certified Hawkeye.

West Point—Fred A. Meyer, Rt. 4, Box 87, 200 bu. certified Harosoy.

NORTH CAROLINA

Selma—Gurley Milling Co. Seed Dept., P. O. Box 488, Ph. WO 5-2303, 5,000 bu. certified Lee, 5,000 bu. uncertified Lee, 3,000 bu. select Roanoke, 3,000 bu. certified Jackson, 3,000 bu. select Jackson, 2,000 bu. select JEW 45, 100 bu. registered Hood.

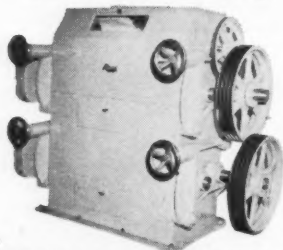
OHIO

Hilliards—Russells Co., 58 Franklin St., 6,500 bu. certified Hawkeye, 2,000 bu. uncertified Hawkeye, 2,000 bu. uncertified Harosoy, 6,000 bu. certified Harosoy, 2,000 bu. uncertified Lincoln, 2,000 bu. uncertified Clark.

Mechanicsburg—Scott Farm Seed Co., 3,000 bu. certified Lincoln.

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NEW



HEAVY DUTY
SOYBEAN
&
CRACKING MILL
IN
10x36 - 10x42
TWO & THREE PAIR HIGH
&
SPECIAL SIZES

ROSS HEAVY DUTY SOYBEAN MILL

This new Ross Model mill is the latest addition to the Ross line of Roller Mills, for over 25 years the Acme of perfection in roller mills and rolls for all purposes: grinding, crimping, crumbling, cracking and flaking. 24 Sizes in four different models available. Standard Rollerator, Heavy Duty, Heavy Duty Jr. and 2 High Models. The Ross Heavy Duty 2 and 3 Pair High Heavy Duty Soybean Mill or Cracking Mill is a specially designed unit for the cutting and processing of soybeans and other hard grains. Each unit is expressly designed for the heavy duty 24 hour service requirements necessary to process soybeans. Equipped with special alloy Turn-Tuff rolls of highest quality, you are assured of maximum service with the special Turner Rolls of super hard quality. Heavy Duty 1½" steel seamless welded housing with oversize roller bearings and special solid corrugated feeder rolls of semi steel, all stainless steel gates, heavy plated fittings, heavy duty enclosed chain differential drives with positive roll tramming, quick throwout levers and shear washer protection for rolls. A special soybean corrugation is usually used on these mills available in reduction multiples of 4-5 to 12-14 corrugations per inch, with differentials to suit.

All Ross units are furnished with highest grade deep chill, Turn-Tuff chilled iron rolls by Turner, Worlds largest roll makers. Tough hard biting corrugations for years of service.

- ★ No Gadgets ★ 24 Hour Service ★ Positive Tram & Roll Setting
- ★ Dust Free Operation ★ All Metal ★ Anti Friction Roller Bearings
- ★ Solid Roll Feeder ★ Stainless Steel Gate ★ V-Drive to Suit
- ★ Enclosed Chain Differential Drive ★ Alloy Shafts ★ Sensibly Priced
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ROSS MACHINE & MILL SUPPLY, INC.

12 N.E. 28th St.

JACKSON 8-2132

OKLA. CITY, OKLA.

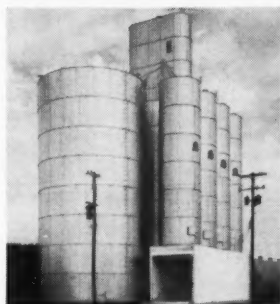
**EXPAND?
MODERNIZE?**
Start from Scratch?

**Whatever your problem
in bulk feed handling,
there's an efficient,
economical answer with
STEEL**

MASTER-CRAFTED BY

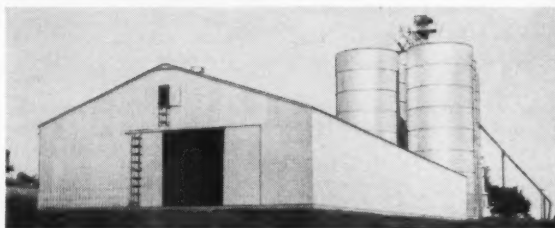
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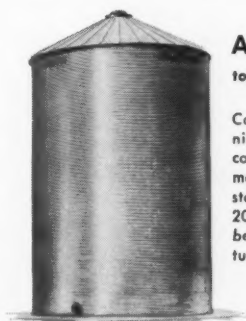


GRAIN ELEVATORS

Big or small — complete from plans fitted to your location, with Columbian "Look Ahead" engineering for your future growth. One tank to expand . . . or a face-lifting job to get competitive with present facilities . . . Columbian equipment and engineering can help you. Find out how now.



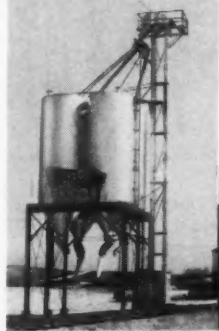
FLAT STORAGE Columbian RIGID-FRAME steel buildings are reinforced to handle grain in big volume. You can fill 'em up safely. They are inexpensive, sturdy, give you the fire-safe and vermin-proof qualities of steel. Sizes up to 100 ft. wide and in any desired length. Write for specifications today.



AUXILIARY STORAGE

to meet quick, current demand, cheaply

Columbian corrugated, galvanized BIG granaries go up fast, cost little, meet CCC requirements, let you cash in NOW on storage needs. Sizes up to 20,000-bu. capacity. Be ready before next harvest. Get literature and prices now.



BULK FEED Mill storage . . . feed manufacturer and dealer storage . . . on-the-feed-lot storage . . . in Columbian steel bulk feed tanks is the efficient way to handle and use bulk feed. Engineered for easy use, there's a design to fit your handling requirement, a size to fit needed volume. A single tank or a complete terminal plant will save you labor and cost when Columbian engineering and Master-Crafted steel equipment is used. Get the whole Columbian bulk feed equipment story. Write us today.

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P. O. Box 4048-U

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Member, American Dehydrators Association. Associate Member, Grain & Feed Dealers National Association



STEEL, Master-Crafted by Columbian . . . First for Lasting Strength

IN THE MARKETS

FACTORY USE VEGETABLE OILS for December 1958 and January 1959. Reported by Bureau of the Census.

Production and stocks; consumption of crude oils in refining January 1959-December 1958 (million pounds)

	Production		Consumed in refining ¹		Factory and warehouse stocks ²	
	January 1959	December 1958	January 1959	December 1958	January 1959	December 1958
Cottonseed oil	195.8	190.0	153.2	161.1	170.1	172.3
Soybean oil	385.5	359.9	317.4	322.6	215.1	173.1
Vegetable oil foots	18.2	19.9	xxx	xxx	51.1	53.0

Refined vegetable oils¹

	Factory production		Factory and warehouse stocks ²	
	January 1959	December 1958	January 1959	December 1958
Cottonseed oil	143.1	150.1	252.1	213.3
Soybean oil	308.8	312.9	165.3	150.9
Vegetable oil foots	xxx	xxx	xxx	xxx

¹ Production of refined oils covers only once-refined oil. Degummed soybean oil is reported as crude oil. ² Includes hydrogenated fats and other fats and oils "in process," (e.g. refined cottonseed oil includes stocks of stearin, hydrogenated or otherwise).

Selected fats and oils products: Production and producers' stocks January 1959-December 1958 (million pounds)

	Production		Producers' stocks	
	January 1959	December 1958	January 1959	December 1958
Salad or cooking oils	140.9	153.5	58.9	55.6
Margarine ¹	149.4	148.3	34.0	38.4
Fatty acids (all grades)	48.8	52.2	62.7	68.4

¹ The margarine quantities in millions of pounds packaged are as follows: 1 pound units—January 139.9, December 139.0; bulk: pats or chips—January 2.0, December 2.0; other—January 7.2, December 7.7. The sum of these items may not agree with the production total shown above because some margarine is not packaged during the same month in which it was produced.

Vegetable oils consumption in selected products January 1959¹
(million pounds)

	Edible products			Inedible products		
	Baking or frying fats (including shortening)	Salad or cooking oils	Margarine	Other edible products ²	Paint or varnish	Other inedible fatty acids
Soybean oil	275.9	89.4	68.3	101.8	2.2	7.2
Cottonseed oil	95.7	27.0	53.1	12.6	2.5	—
Vegetable oil foots	11.9	—	—	—	2.5	0.1

¹ Includes hydrogenated fats and other fats and oils "in process," (e.g. refined cottonseed oil includes stearin, hydrogenated or otherwise).
² Includes confectioners' fat and similar products.

PRICE SUPPORT. Quantities of 1958-crop soybeans reported under support through February 1959, compared with totals of 1957-crop through Feb. 15 and Mar. 15 a year earlier by Agricultural Marketing Service (bushels).

Warehouse-stored loans	Farm-stored loans	Total under support through Feb. 28, 1959	Total under support through Feb. 15, 1958	Total under support through Mar. 15, 1958
73,753,960	51,601,287	138,868,232	89,691,550	90,434,842

Of the quantities of 1958 crop put under support farmers had repaid loans as reported through February on 3,033,683 bushels of soybeans.

1958-crop soybeans put under support during February 1959 as compared to quantities reported during January 1959 and to quantities of 1957-crop soybeans put under during the two 30-day periods, Jan. 15-Feb. 15, 1958, and Feb. 15-Mar. 15, 1958 (bushels)

February 1959	January 1959	Jan. 15-Feb. 15, 1958	Feb. 15-Mar. 15, 1958
14,563,612	26,620,672	31,466,359	743,292

Loan and purchase agreement figures by states for 1958-crop soybeans reported under price support as of Feb. 15, 1959 (bushels):

	Loans stored		Purchase agreements	Total quantity put under support
	Warehouse	Farm		
Alabama	0	61,497	211,584	273,081
Arkansas	6,758,496	3,608,659	51,422	10,418,577
Delaware	0	3,066	1,200	4,266
Florida	0	203	0	203
Georgia	59,523	28,934	0	88,457
Illinois	15,782,308	8,001,826	4,765,005	28,549,139
Indiana	1,312,467	2,879,831	725,155	4,917,453
Iowa	21,909,167	17,087,147	3,453,413	42,449,727
Kansas	455,100	842,368	60,921	1,358,389
Kentucky	292,781	156,173	16,936	465,890
Louisiana	36,783	49,666	1,200	87,649
Maryland	0	3,446	0	3,446
Michigan	400,921	219,634	277,298	897,853
Minnesota	12,774,417	8,283,623	1,268,207	22,326,247
Mississippi	1,049,608	977,453	68,721	2,095,782
Missouri	5,320,996	4,415,241	609,427	10,345,664
Nebraska	1,017,788	1,061,178	235,107	2,314,073
New Jersey	0	8,731	1,000	9,731
New Mexico	20,299	1,624	0	21,923
New York	0	0	1,130	1,130
North Carolina	590	92,696	0	93,286
North Dakota	760,317	652,172	324,859	1,737,348
Ohio	2,169,579	1,346,292	550,610	4,066,481
Oklahoma	399,434	140,969	0	540,403
Pennsylvania	489	1,778	0	2,267
South Carolina	969,519	354,516	5,000	1,329,035
South Dakota	219,827	415,613	101,228	736,668
Tennessee	784,830	252,751	128,269	1,165,850
Texas	644,663	38,263	11,940	694,866
Virginia	89,548	37,854	4,800	132,202
Wisconsin	41,693	777,848	18,325	137,866
Total	73,271,143	51,101,052	12,892,757	137,264,952

Ventilation Problems Solved with AIR-O-VATOR



Model 12
\$24.50 F.O.B.

AIR-O-VATOR — finest year 'round ventilator — keeps air constantly in circulation. Controls problems of condensation, dust, moisture, excess heat, odors, smoke, heavy fumes, foul air and heavy air borne particles. 3-year money back written guarantee; expert engineering, wind-tunnel tested; all sizes. Guaranteed sealed bearings. Ideal for flat and tank storage and headhouses. Power booster fans available.

Special low price for the grain trade.
Call collect 132 or write:

AIR-O-VATOR CO., INC.
Scottsbluff, Nebr.

SUPPLY, DISTRIBUTION of soybeans, 1955-58, reported by Agricultural Marketing Service (1,000 bu.)

	1958-59	1957-58	1956-57	1955-56
Carryover, Oct. 1	21,083	9,897	3,731	9,949
Production	574,413	483,715	449,446	373,522
Total supply ¹	595,496	493,612	453,177	383,471
Farm use, including seed for season	31,000	33,000	42,000	30,000
Quantity remaining for processing, export, or carryover	564,496	460,612	411,177	353,471
Disappearance, October through Feb. 28				
Crushed for oil or processed ²	172,097	143,922	136,548	123,624
Exported	355,354	50,352	48,646	44,160
Total	227,451	194,274	185,194	167,784
Balance on Mar. 1 for processing, export, or carryover	337,045	266,338	225,983	185,687

¹ Imports not included because negligible. ² No allowance is made for new crop crushings prior to Oct. 1. ³ Estimated.

EXPORTS. Preliminary data on U. S. exports of soybeans and soybean oil for January 1959 with comparable data for January 1958 and cumulative totals for 1957-58 and 1958-1959, reported by Foreign Agricultural Service, U. S. Department of Agriculture.

Unit	January 1958	January 1959	October-January 1957-58	October-January 1958-59
Soybeans	7,234,176	9,315,553	46,446,681	47,354,001
Soybean oil:				
Crude	12,311,713	38,105,612	55,204,041	105,493,667
Refined but not further processed lb.	27,500,637	2,117,870	51,189,441	13,082,802
Refined, deodorized and hydrogenated lb.	13,109,566	47,928,360	44,927,495	136,499,730

Soybeans: Inspections for export by ports and lake shipments to Canada February 1959 (1,000 bu.)

Atlantic	Gulf
Philadelphia	Mobile
Baltimore	Port Allen
Norfolk	Subtotal
Subtotal	Feb. 1959
Gulf	Jan.-Feb. 1959
New Orleans	Jan. Feb. 1958

Based on weekly reports of inspections for export by licensed inspectors and does not include rail or truck movement to Canada or Mexico. ¹ Includes 112,403 bushels of soybeans shipped from Morehead City, N. C.

Soybeans: Inspections for export by coastal areas and country of destination, February 1959 (1,000 bu.)

Atlantic	Gulf
Norway	The Netherlands
United Kingdom	West Germany
The Netherlands	Japan
Belgium	Subtotal
West Germany	Grand total
Israel	Total Jan.-Feb. 1959
Hong Kong	Total Jan.-Feb. 1958
Japan	
Subtotal	

Note: Data are based on weekly reports of inspections for export by licensed inspectors and do not include rail or truck movement to Canada or Mexico. In some cases the ultimate destination is not shown on the inspection reports, therefore, the quantity of each country may vary from official Census data which are based on custom declarations.

Free world imports of farm products to Sino-Soviet bloc,¹ 1953-57

	1953	1954	1955	1956	1957
	million dollars	million dollars	million dollars	million dollars	million dollars
Fats, oils, oilseeds	24	109	81	59	70

Free world imports of farm products from the Sino-Soviet bloc,¹ 1953-57

	1953	1954	1955	1956	1957
	million dollars	million dollars	million dollars	million dollars	million dollars
Soybeans	(3)	(3)	43	39	34
Other fats, oils, oilseeds ⁴	115	564	60	79	55

¹ Soviet Union, Mainland China, and East European Communist countries excluding Yugoslavia. ² Excludes butter, lard, and margarine. ³ Included with "other fats, oils, oilseeds." ⁴ Excludes lard and margarine. ⁵ Excludes butter. Source: Compilations of International Economic Analysis Division, Bureau of Foreign Commerce, U. S. Department of Commerce.

Title I, P. L. 480 shipments July 1958-February 1959 (pounds)

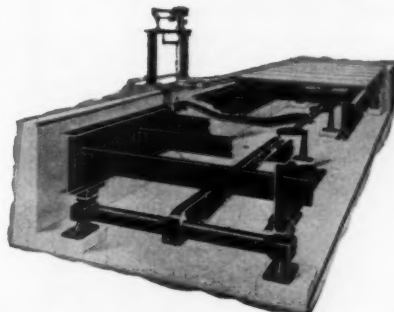
	February 1959	July 1958-February 1959
	Metric tons	Metric tons
Cottonseed oil		1,325
Soybean oil	4,210	2,921,000
Foreign Agricultural Service, U. S. Department of Agriculture	9,280,000	424,523,000

Winslow Scales with cabinet dial with weighbeam

Truck scales for bulk feed stations, grain elevators, cooperatives, and other installations requiring truck-load weighing. Weight indication: weighbeam or cabinet dial, weight printing if desired.

Floor Type Scales — Hopper Scales
Manufactured to Special Size

Write Us Your Requirements



Two-Section Type "S" With Full Capacity Weighbeam

Heavy duty, quality equipment—accurate—wide range of capacities and platform sizes.

WINSLOW GOVERNMENT
STANDARD SCALE WORKS, INC.

Haythorne & Winslow Ave. Terre Haute, Indiana

SCALE MANUFACTURERS FOR OVER 50 YEARS

HUMPHREY
Manlift
ELEVATOR

- ★ Eliminates Stair Climbing
- ★ Saves Time—Reduces Fatigue
- ★ Safe—Economical—Dependable

The Humphrey Elevator transports personnel simultaneously up and down—eliminates all stair climbing—provides quick access to any floor for servicing machinery. Riders just step on and off—control rope instantly starts and stops the endless belt—no waiting or lost time!

Can be installed in new or old multi-floor buildings. Initial cost, installation and operating costs are much lower than conventional elevators. Widely used in garages, flour mills, grain elevators, paper mills and all types of industrial mills and factories.

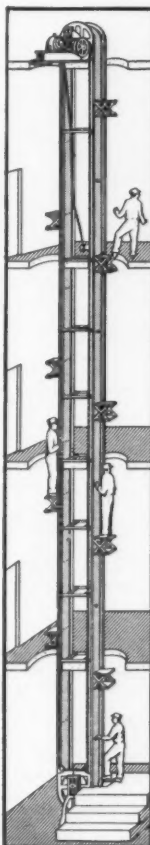
Write us stating your requirements and we will furnish full information, blue prints, prices.

Circular on request

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HUMPHREY ELEVATOR CO.
384 1st AVENUE N.W., FARGO, MINN.

Humphrey is the original Manlift Elevator, made continuously since 1887.



Cottonseed and soybean oils and lard: Exports under Title I Public Law 480 programs, and total exports, October 1954-January 1959 (million pounds)

	Oct. 1-Sept. 30 1954-55 1955-56 1956-57			Oct. 1-Jan. 31 1957-58 1958-59		
Shipments under P. L. 480:						
Cottonseed	291	55	97	20	1	
Soybean	279	495	592	16	190	
Total oils	117	570	550	36	191	
Lard	112	65	3	3		
Total shipments:						
Cottonseed	1710	1611	423	248	145	389
Soybean	50	557	807	803	151	3217
Total oils	760	1,168	1,230	1,051	296	306
Lard ²	528	663	530	394	147	138

¹ Includes foreign donations under Section 416 Title III, Public Law 480.
² Revised to exclude shipments to U. S. territories. ³ January exports estimated. Foreign Agricultural Service.

Fats and oils: U. S. exports under Title I, Public Law 480, marketing year ending Sept. 30, 1958, and October 1958 through Jan. 31, 1959 (million pounds)

Period and country	Edible oils		Total
	Cottonseed	Soybean	
Oct. 1957-Sept. 1958:			
Brazil	6.9		6.9
China (Taiwan)		6.8	6.8
Colombia	4.5	1.7	6.2
Ecuador	1.9	1.7	3.6
Iceland .....	.2	.6	.8
Israel	4.4	5.9	10.3
Italy		67.0	67.0
Pakistan	13.0	.1	13.1
Poland	2.2	25.7	27.9
Spain		318.0	318.0
Turkey	59.7	86.5	146.2
Yugoslavia	4.4	77.6	82.0
Total	97.2	591.6	688.8
Oct. 1958-Jan. 1959:			
China (Taiwan)		3.5	3.5
Ecuador	1.4	1.8	3.2
Israel		2.2	2.2
Italy		7.8	7.8
Poland		29.2	29.2
Spain		138.2	138.2
Turkey		7.0	7.0
Total	1.4	189.7	191.1

Foreign Agricultural Service.

STOCKS. Agricultural Marketing Service's commercial grain stocks reports for close of business on Friday or Saturday preceding date of report (1,000 bu.)

	Feb. 25	Mar. 3	Mar. 10	Mar. 17	Mar. 24
U. S. soybeans in store and afloat at domestic markets					
Atlantic Coast	3,885	2,198	3,040	3,149	2,992
Gulf Coast	1,199	1,271	1,358	1,608	2,127
Northwestern and					
Upper Lake	2,575	2,624	2,549	2,511	2,404
Lower Lake	14,008	13,477	14,056	14,077	13,518
East Central	8,813	8,446	8,010	7,442	6,038
West Central					
Southwestern & Western ..	3,487	3,482	3,383	3,368	3,092
Total current week	33,967	31,498	32,396	32,155	30,171
Total year ago	23,454	21,635	21,554	20,424	19,790
U. S. soybeans in store and afloat at Canadian markets					
Total current week	382	338	298	264	230
Total year ago	83	83	37	1	1
Total North American commercial soybean stocks					
Current week	34,349	31,836	32,694	32,419	30,401
Year ago	23,537	21,718	21,591	20,425	19,791

Primary receipts (1,000 bu.) of soybeans at important interior points for week ending:

	Feb. 20	Feb. 27	Mar. 6	Mar. 13	Mar. 20
Chicago	359	267	276	196	6
Duluth					19
Indianapolis	51	60	26	4	3
Kansas City	31	18	14	10	90
Milwaukee			4		25
Minneapolis	37	76	134	158	62
Omaha		56	12	27	19
Peoria	66	69	67	43	
Sioux City			26	7	33
St. Joseph			2		59
St. Louis	8	8	4	2	244
Toledo	73	54	35	31	
Totals	625	608	600	478	560
Last week	548	625	608	600	478
Last year	550	702	606	630	924
Total Chicago soybean stocks	11,632	11,421	11,311	10,928	10,772

SEED IMPORTS. Imports of soybean seed for the period July 1, 1958, through Feb. 28, 1959, totaled 15,700 pounds, all from Canada, U. S. Department of Agriculture reports.

PROCESSING OPERATIONS. Reported by Bureau of the Census for January and February 1959.

Primary products except crude oil at crude oil mill locations: Production, shipments and transfers, and stock, February 1959-January 1959 (1,000 tons)

	Production		Shipments and transfers		Stocks end of month	
	Febru-ary 1959	Janu-ary 1959	Febru-ary 1959	Janu-ary 1959	Feb. 28, 1959	Jan. 31, 1959
Soybean:						
Cake and meal	800.0	872.6	780.5	859.7	87.7	68.2
Millfeed (hull meal)						

Soybeans: Net receipts, crushings, and stocks at oil mills, by states, February 1959-January 1959 (1,000 tons)

	Net receipts at mills ¹		Crushed or used		Stocks at mills	
	Febru-ary 1959	Janu-ary 1959	Febru-ary 1959	Janu-ary 1959	Feb. 28, 1959	Jan. 31, 1959
U. S.	783.2	971.5	1,019.0	1,100.6	2,593.5	2,829.3
Illinois	272.2	320.6	319.1	344.4	653.7	700.6
Indiana	67.4	62.1	86.8	89.4	257.3	276.6
Iowa	118.9	179.2	161.1	173.1	214.2	256.4
Kansas	(2)	(2)	(2)	(2)	(2)	(2)
Kentucky	(2)	(2)	(2)	(2)	(2)	(2)
Minnesota	69.5	99.3	75.6	88.3	109.4	115.6
Missouri	(2)	(2)	(2)	38.1	(2)	(2)
Nebraska	(2)	(2)	(2)	(2)	(2)	(2)
North Carolina	1.6	5.3	5.3	6.2	58.6	62.2
Ohio	64.1	83.8	98.6	97.2	320.1	354.6
Tennessee	64.3	79.7	95.1	102.3	309.6	340.4
All other	125.2	141.6	177.4	161.5	670.6	722.8

¹ Net receipts for each state are derived from the quantity of beans crushed and net change in stocks. ² Included in "All other" to avoid disclosure of figures for individual companies. Detail figures may not add to totals because of independent rounding.

Soybean products: Production and stocks at oil mill locations, by states, February 1959-January 1959

	Crude oil (millions of pounds)				Cake and meal (thousands of tons) ¹			
	Febru-ary 1959	Janu-ary 1959	Feb. 28, 1959	Jan. 31, 1959	Febru-ary 1959	Janu-ary 1959	Feb. 28, 1959	Jan. 31, 1959
U. S.	355.3	385.5	118.5	111.8	800.0	872.6	87.7	68.2
Illinois	114.6	123.9	23.0	21.0	245.9	267.9	27.9	16.8
Indiana	29.8	31.0	(2)	(2)	69.2	71.4	(2)	(2)
Iowa	55.3	60.4	28.2	27.5	128.0	141.4	11.8	8.6
Kansas	(2)	(2)	3.0	2.9	(2)	(2)	(2)	(2)
Kentucky	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Minnesota	25.2	30.8	21.9	18.4	59.3	70.2	4.5	6.5
Missouri	(2)	13.9	3.0	2.1	(2)	30.8	1.9	1.7
Nebraska	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
N. Carolina	1.4	1.6	0.7	0.6	4.3	5.0	0.8	0.8
Ohio	32.9	32.3	7.1	5.8	79.3	78.0	7.6	6.1
Tennessee	34.1	36.0	10.4	12.6	74.0	80.3	8.4	8.0
All other	62.0	55.7	21.2	20.9	140.0	127.6	24.8	19.7

Detail figures may not add to totals because of independent rounding. ¹ Include millfeed (hull meal). ² Included in "All other" to avoid disclosure of figures for individual companies.

INSPECTIONS. Soybeans inspected by grade and percent, reported by Agricultural Marketing Service.¹

	February 1959 ²		January 1959		February 1958		Oct.-Feb. 1958-59		Oct.-Feb. 1957-58	
	1,000 bu.	Pct.	1,000 bu.	Pct.	1,000 bu.	Pct.	1,000 bu.	Pct.	1,000 bu.	Pct.
No. 1	5,596	28	7,361	29	4,183	27	56,447	24	44,076	21
No. 2	9,718	49	11,613	46	6,444	41	113,192	47	90,693	42
No. 3	3,020	15	3,858	16	3,174	20	47,111	20	54,674	25
No. 4	973	5	1,563	6	1,378	0	17,431	7	19,353	9
Sample	461	3	742	3	533	3	5,526	2	5,469	3
Total	19,768	100	25,137	100	15,712	100	239,707	100	214,265	100

¹ Carlot receipts have been converted to bushels on the basis that 1 carlot equals 1,750 bushels. ² Of the February receipts, 400 bushels were black, and the remainder yellow soybeans. Inspections of soybeans in February included 2,794,745 bushels as cargo lots, 1,480,153 bushels as truck receipts, and the balance as carlot receipts. Based on reports of inspections by licensed inspectors at all markets.

PRICES. Average prices for soybeans received by farmers, effective parity, and support rates, reported by Agricultural Marketing Service (dollars per bushel).

Agricultural Marketing Service (dollars per bushel)								
Average farm price			Effective parity	Av. price as percent of parity		National average price support rate		
Feb. 15 1959	Jan. 15 1959	Feb. 15 1958	Feb. 15 1959	Feb. 15 1959	1959 crop	1958 crop	1957 crop	
2.05	2.02	2.05	2.89	71	1.85	2.09	2.09	

Average farm and parity prices from crop reporting board, USDA.

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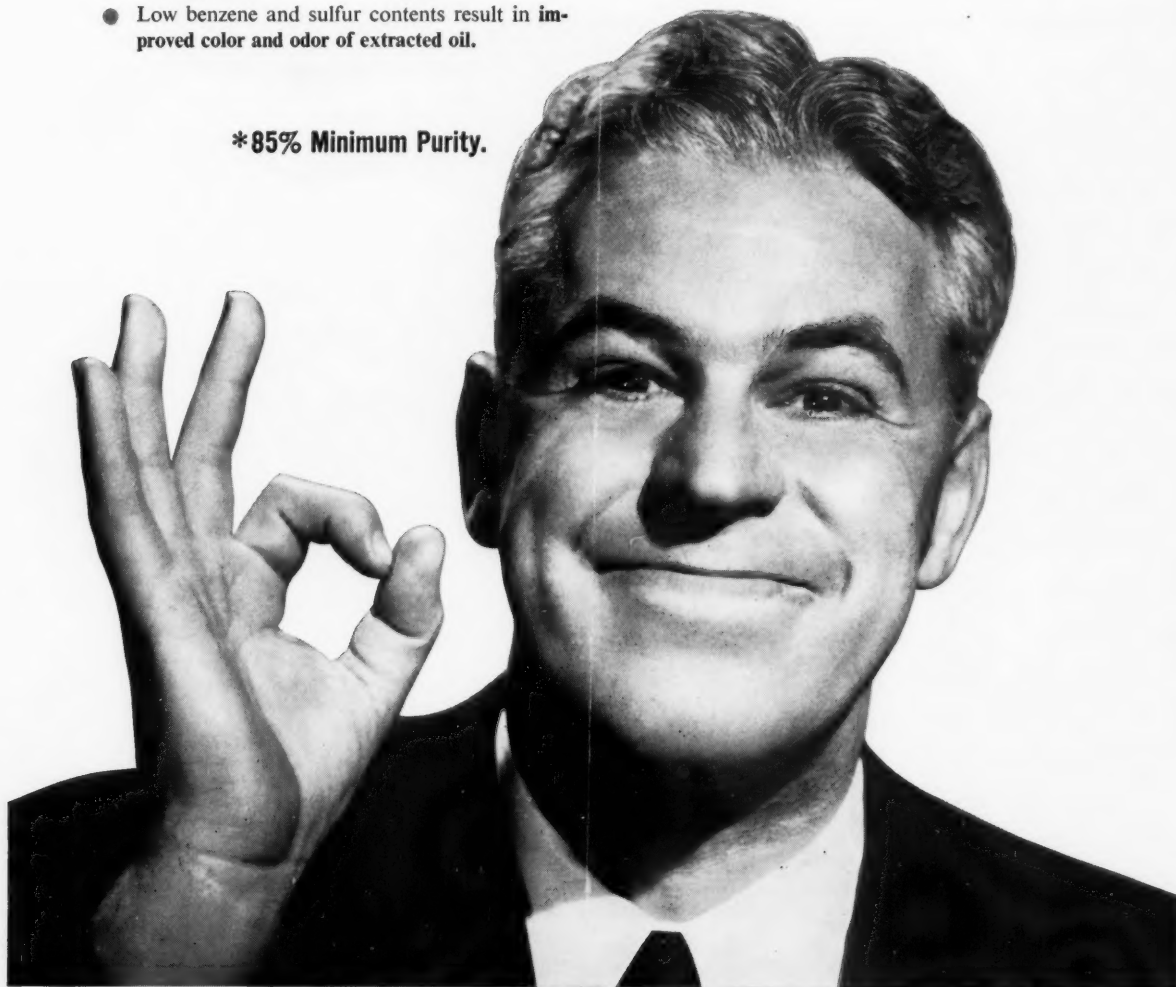
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